OPERATING MANUAL

61301604086 Rev. A

SERIES 1800

CAGE AND BOTTLE WASHER

USER MANUAL

MTP®

SERIES 1800

CAGE AND BOTTLE

WASHER

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GETINGE Castle

USER MANUAL 61301604086

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DESCRIPTION OF SYMBOLS & NOTES IN MANUAL

The following symbols with related notes appear in this manual.

"Warning" notes alert the user to the possibility of personal injury.

"Caution" notes alert the user to the possibility of damage to the equipment.

"Notes" alert the user to pertinent facts and conditions.

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SPECIAL SAFETY INSTRUCTIONS

SPECIAL SAFETY INSTRUCTIONS APPEAR BELOW. READ THEM CAREFULLY BEFORE OPERATING THE UNIT.

"Warning" notes alert the user to the possibility of personal injury.

Safety Precautions

WARNING — FALL HAZARD: Areas located immediately around the washer may become a fall hazard due to water dripping. For a safe environment, keep the floor clean and dry.

WARNING — BURN HAZARD: This washer operates at extremely high temperatures.

- Hot water and steam can cause injury such as burns. Use caution in and around the washer chamber and external piping.
- Steam may escape when the door is opened. Stand back and to the side when opening the door.
- Allow the load to cool before removing it from the chamber.
- Allow the washer to cool down prior to any maintenance.

WARNING — SHOCK HAZARD: Disconnect all utilities and follow standard lockout/tagout procedures for your workplace before performing maintenance on the washer.

WARNING — PERSONNEL HAZARD: Safe and efficient operation of this equipment requires scheduled preventive maintenance. Routine adjustments and replacement of parts by other than qualified maintenance personnel may cause personal injury or equipment malfunction.

Running a Cycle

BURN HAZARD: Steam may escape when the door is opened. Stand back and to the side when opening the door.

Wear protective gloves when removing the load from the chamber. The chamber interior and accessories, as well as the load, will be HOT.

General Machine Operation **p. 3–1, 3–4**

BURN HAZARD: Do not open a Washer door during a cycle. This could release hot water through the door opening, resulting in burns to personnel.

HOT SURFACES: The metal surface that surrounds the opening at the load and unload end of unit becomes hot during normal operation. Use caution when loading and unloading the washer.

Daily Checklist **p. 3–3**

HOT SURFACES: The Chamber could be HOT. Use caution when loading and unloading the Chamber.

Emergency Stop **p. 3–4**

The Electrical Disconnect Switch de-energizes the controls only; it does not remove all power from the washer.

Routine Maintenance Schedule—Standard **p. 4–5**

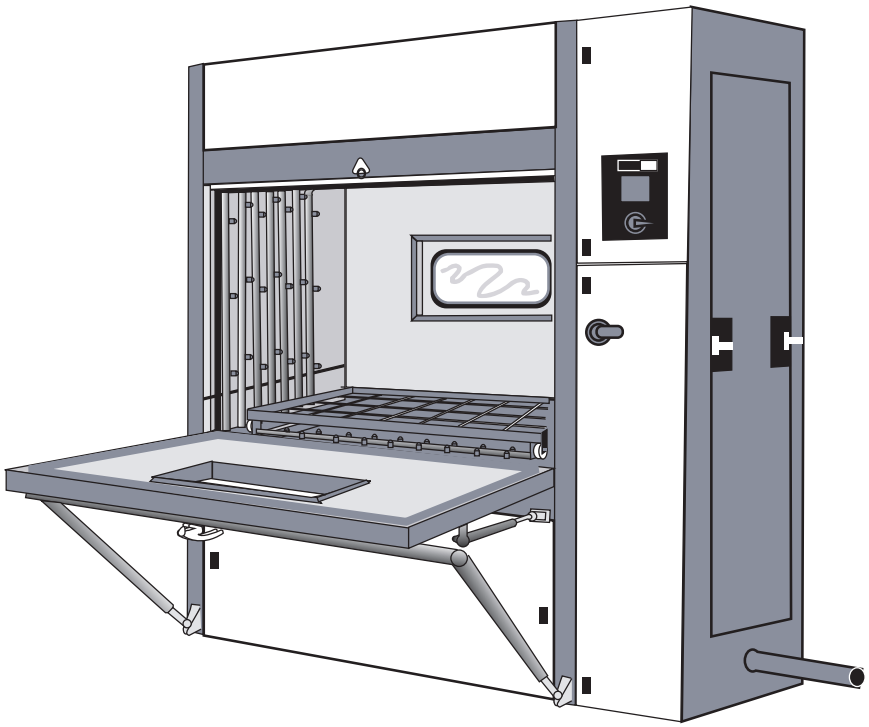
ELECTRIC SHOCK HAZARD: Only an electrician should perform this test!

If this test fails, contact your Authorized Service Technician

Section 1 General Description

INTRODUCTION

Figure 1–1. ,MTP 1800 Series Washers



The MTP 1800 series units are an automatic, heavy-duty, single chamber, cabinet- type, hydrospray washers. The units are designed to efficiently and thoroughly clean and sanitize cages, bottles, debris pans and utensils used in research animal care facilities.

Units are available in vertical or drop down door configurations. Units are floor mounted and may be recessed through one or two walls or installed free standing. Left side service access and control terminal location is standard with right side service access and control terminal location optional.

Models and dimensions are listed in Table 1-1.

Table 1–1. MTP 1800 Washer

MODEL	CHAMBER SIZE (see note)	EXTERNAL OVERALL SIZE	DOOR CONFIGURATION
1810	48” W x 32”H x 34”D	73”W x 82”H x 38.5”D	Vertical
1820	48” W x 32”H x 48”D	73”W x 82”H x 52.5”D	Vertical
1830	48” W x 32”H x 34”D	73”W x 82”H x 38.5”D	Drop Down
1840	48” W x 32”H x 78”D	73”W x 82”H x 52.5”D	Drop Down

NOTE ▶

The above dimensions are the maximum chamber opening. The load size must be smaller to allow for loading clearances.

Routine operation consists of placing the load to be cleaned in the chamber, close the chamber door, select the desired cycle, and press the cycle start button. The washer automatically proceeds through the treatment process and alerts the user when the process is complete. The user then opens the chamber door and removes the cleaned load.

At the end of the processing period, the user places the unit in the STANDBY mode. All processing functions will immediately stop and the sump will automatically drain.

Standard Features

- Microcomputer Color Touch Screen Control
- Twelve User Programmable Cycles
- Automatic Seven Phase Treatment Cycles
- Program Access Code Security
- Wash and Rinse Temperature Assurance
- Built-In Service Diagnostics
- Personnel Safety System
- Water Conservation System
- 7.5 HP Pump (Models 1810 & 1830)
- 10 HP Pump (Models 1820 & 1840)
- Automatic Sump Water Level Control
- Automatic Self-Cleaning Debris Filter
- Agent Injections Ports and Contacts
- Stainless Steel Steam Coil Heating
- Vertical or Drop Down Doors
- All Stainless Steel Construction
- Full Work Area Stainless Steel Grating
- Insulated Chamber Construction
- Left or Right Service Side Installation

Optional Features

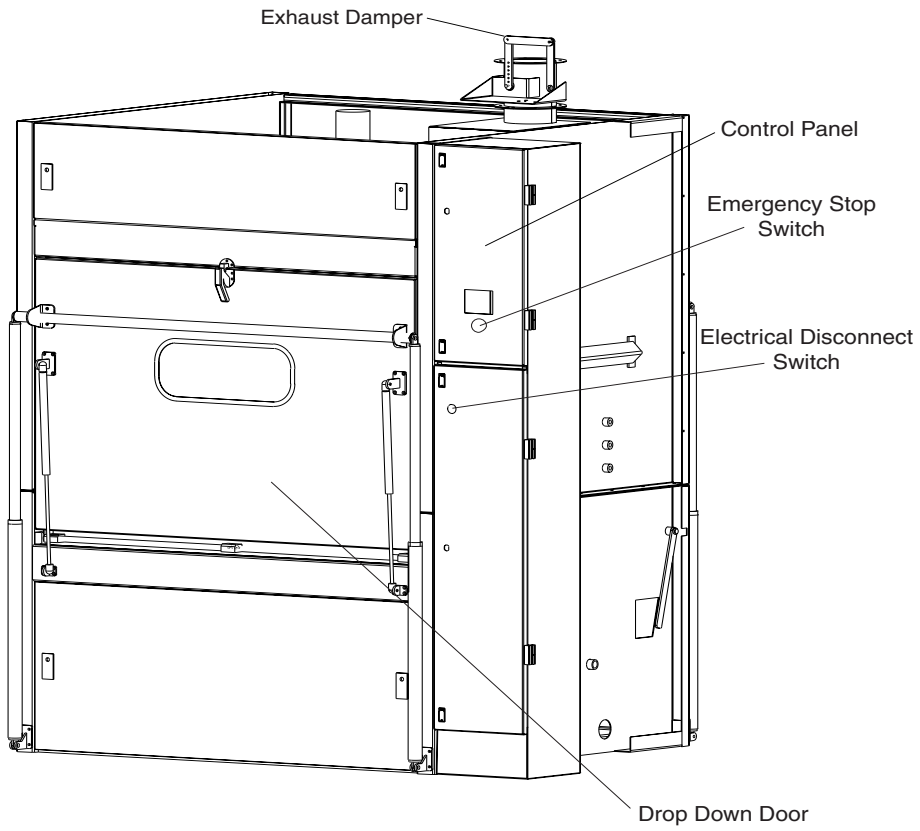
- Strip Chart Printer
- RS232 Port for Data Download
- Double Door Pass Through
- Double Door Interlocks for Manual Doors
- Powered Vertical Doors with Interlocks
- Electric Stainless Steel Sump Heaters
- Stainless Steel Treatment Components
- Cold Water Pre-Wash Treatment
- Non-Recirculated Final Tap Water Rinse
- Non-Recirculated Final Pure Water Rinse
- House Tap Water Temperature Booster
- Pure Water Temperature Booster
- Automatic Agent Injection Systems
- Internal Chamber Illumination
- Stainless Steel Automatic Damper
- Power Exhaust Fan
- Vented/Non-Vented Vapor Removal Condenser
- Drain Discharge Cool-Down Systems
- Treatment Solution pH Neutralization Systems
- Removable Center Header
- Recessed or Free Standing Cabinet Installations
- Seismic Design
- Knocked Down Shipment
- Modem Troubleshooting

Accessories

- Mouse Box Processing Rack
- Rat Box Processing Rack
- Pan Processing Rack
- Transfer Cart
- Feeder Bottle Baskets
- Custom Accessories

EXTERIOR COMPONENTS

Figure 1–2. EXTERNAL COMPONENTS



Control Panel

Provides a pressure sensitive touch screen for the user that is connect to a Programmable Logic Control (PLC) located in the Control Box. Enables the user to select, program, and monitor processing cycles.

Emergency Stop Switch

The EMERGENCY STOP Switch should be used to terminate all treatment functions and activate the audible alarms.

Electrical Disconnect Switch

Rotate the Electrical Disconnect Switch to the:

- ON position to energize the washer.
- OFF position to de-energize the washer.

Exhaust Damper

Opens fully during the Exhaust phase of a wash cycle to permit residual vapors to escape from the chamber. Closed 70% during the wash and rinse phases of the wash cycle.

Alarm (Not Shown)

Sounds an audible alert when:

- A cycle is completed (Pulsing/Audible alarm).
- A cycle is aborted.
- The Programmable Logic Controller (PLC) detects processing problems.

Service Area (Not Shown)

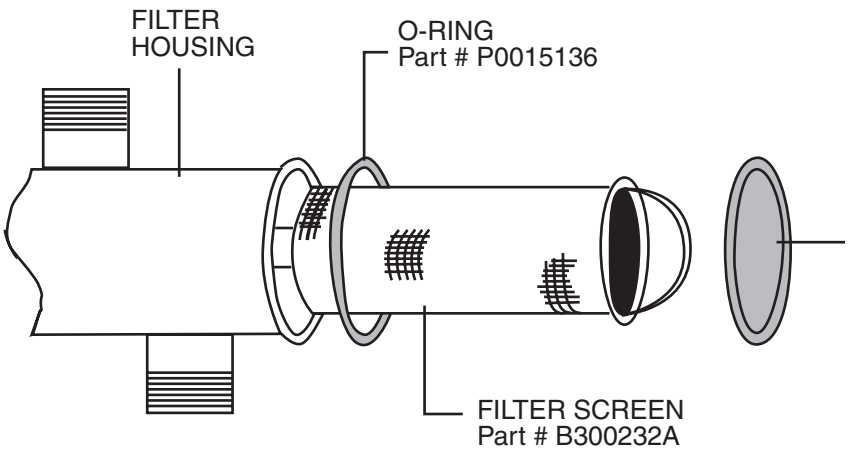
Contains piping, valves, pumps, control box, manifold drive motor, etc.

Dispenser (Option)

An optional Chemical Dispenser automatically pumps the required chemical into the water solution held in the sump. The Dispenser is activated during the Wash phases of a processing cycle.

Automatic Self-Cleaning Debris Filter

The output of the wash pump is provided with a self-cleaning debris filter screen having perforations smaller than the spray jet orifices to prevent plugged jets. The filter is attached to the Treatment Pump and is back flushed by a ball valve operated by the control system. The filter screen can be accessed without the use of tools.



A screen is provided at the input to the pump to prevent large debris from entering the pumping system.

The automatic self-cleaning debris filter screen should be rinsed clean daily, removing any debris. See Table 4–1, “Maintenance Schedule–Standard,” on page 4–1.

Door Configurations

VERTICAL SLIDING DOOR (Models 1810 and 1820

The unit contains a manually operated, counter balanced, vertical sliding door. The door is double wall construction with insulation. A tempered glass, water-tight observation window is provided in both the load and optional unload doors.

DROP DOWN DOOR (Models 1830 AND 1840)

The unit contains a manually operated, counter balanced, drop down door. The door is double wall construction with insulation. A tempered glass, water-tight observation window is provided in both the load and optional unload doors. A stainless steel washing rack that rolls out onto the door is included for ease of loading and unloading.

OPEN DOOR Switches

Stops Washer operation if a Load or Unload End door is opened during a cycle. Prevents the start of washer operation if a door is not closed. Lights indicating an open door are located on the Load and Unload End Control Panels.

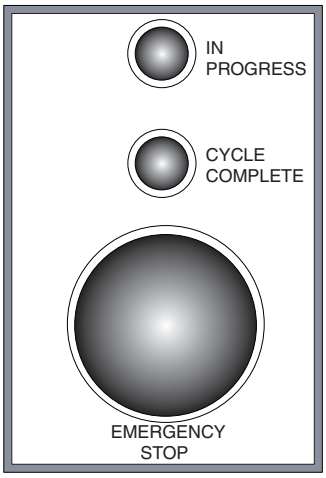
Emergency Stop Switches (Load and Unload End)

Pressing the EMERGENCY STOP switch terminates all functions of the washer and sounds the alarm.

Unload End Control Panel

Displays the operational status of the unit at the Unload End

Figure 1–3. UNLOAD END CONTROL PANEL



IN PROGRESS INDICATOR

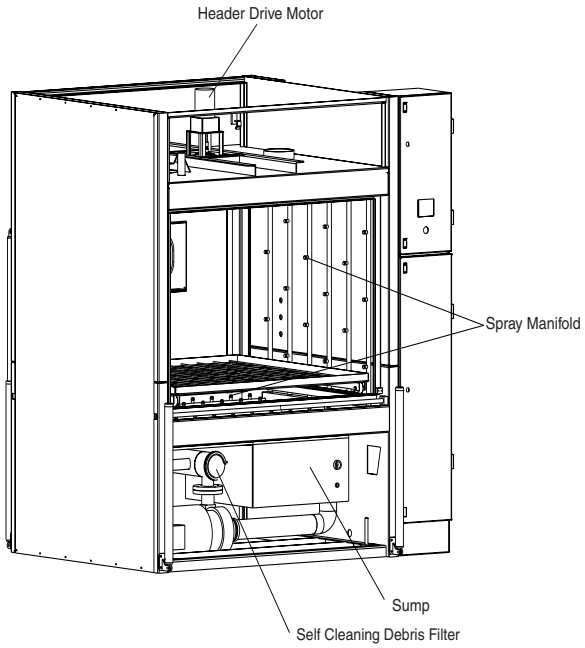
Displays an amber light for the duration of an ongoing processing cycle. The IN PROGRESS Indicator is located at the Unload End of the Washer.

CYCLE COMPLETE INDICATOR

Displays a green light whenever the Electrical Disconnect Switch is turned ON, as long as a cycle is not operating. The light turns off at the start of a processing cycle. When the cycle ends, the light comes back on. The CYCLE COMPLETE Indicator is located at the Unload End of the Washer.

INTERIOR COMPONENTS

Figure 1–4. Internal Components (door and front panels not shown)



Spray Manifold

Delivers the various wash and rinse spray treatments to the load during a processing cycle. Vertical and horizontal sections - fitted with spray nozzles - make up the complete assembly.

Guide Rail (not shown)

Functions as a restraint to keep items, such as utensil carts, from being improperly positioned. Four rails are provided on the inside of the chamber door.

Sump

Holds the supply of solution (wash and rinse) that is pumped to the Spray Manifold during a processing cycle. During processing, it collects all drainage for recirculation. A steam heating coil installed in the sump maintains the temperature of the wash solution, and other treatment solutions - if specified.

Header Drive Motor

Moves the Spray Manifold back and forth inside the chamber during the processing cycles.

MOST COMMON OPTIONS

Strip Chart Printer

A strip chart printer with paper take-up, records all cycle program and in-process performance data. Each cycle program, including time and temperature set points, may be printed on demand. In-process cycle data is automatically printed at the beginning and end of each cycle phase, as well as at the beginning and end of each cycle phase, to provide a chronological time/temperature profile of actual cycle performance.

Vertical Powered Door

The door is powered open and closed to permit ease in loading and unloading the chamber. The system includes door activation switches and status lights at the door location, which are wired to the automatic control system.

Double Door Pass-Through

The unit is provided with an additional door for pass through operation and is complete with an unload end user control panel.

Electric Heat

Stainless steel, electric immersion heaters are provided in the sump in place of the steam coil heater to maintain the recirculated treatment solution temperature. The unit requires a separate electrical connection.

Automatic Agent Injection System

TIME BASED

A non-monitored, time based, volumetric type injection system is provided to automatically meter user supplied liquid cleaning agent into the sump. (Two systems are required if an alkaline and acid treatment solution are to be used).

MONITORED

A monitored proportional type injection system is provided to automatically inject user supplied liquid cleaning agent into the sump. The treatment solution concentration is sensed with a probe, and a proportional amount of agent is injected to attain and maintain the selected agent concentration. (Two systems are required if an alkaline and acid treatment solution are to be used.)

Internal Chamber Illumination

An exterior vapor proof port and light is provided to illuminate the chamber interior.

Automatic Self-Cleaning Debris Filter

The output of the wash pump is provided with a self-cleaning debris filter. The filter is attached to the treatment pump and is back-flushed by a ball valve operated by the control system. The filter screen may be accessed without the use of tools.

An additional perforated stainless steel debris basket is provided above the recirculated tank to prevent large debris from entering the piping and pump system. The screen can be easily removed for cleaning.

Drain Discharge Cool-down System

NON-MONITORED

Cold tap water is automatically injected into the drain discharge to lower the discharge temperature to below 140°F before entering into the building's drain system.

MONITORED

The discharge of the machine is drained into a stainless steel holding tank. The system senses the discharge temperature with a probe and adds the required amount of cold water to lower the discharge temperature to below 140°F before discharging tot he building's drain system.

Removable Center Washing Header

An additional header is provided in the center of the chamber to increase the washing capacity of the unit. This header can be removed to accommodate larger items to be washed. This option increases the overall washer width by 8 inches.

ACCESSORIES

Mouse Box Rack

Two stainless steel racks are provided.

- Models 1810 and 1830 — have the capacity to process 24 standard mouse shoe boxes per load. (48 boxes per load if the machine is equipped with center washing header.)
- Models 1820 and 1840 — have the capacity to process 40 standard mouse shoe boxes per load. (60 boxes per load if the machine is equipped with center washing header.)

Rat Box Rack

Two stainless steel racks are provided.

- Models 1810 & 1830 — have the capacity to process 8 standard rat shoe boxes per load. (18 boxes per load if the machine is equipped with center washing header.)
- Models 1820 & 1840 — have the capacity to process 16 standard rat shoe boxes per load. (16 boxes per load if the machine is equipped with center washing header.)

Pan Rack

Two stainless steel racks are provided to process pans with a maximum width of two inches.

Transfer Cart

A stainless steel transfer cart is provided to transport racks to and from the washer. The transfer card interfaces with the chamber opening to permit easy transfer of racks into and out of the chamber.

Feeder Bottle Baskets

Stainless steel bottle baskets are provided for processing 8, 16, or 32 oz. bottles. Baskets are configured in a 4 x 6 pattern.

General Machine Operation

Automatic Seven Phase Treatment Cycle

The standard treatment cycle consists of a Prewash, Wash 1 and Soak, Wash 2 and Soak, Rinse 1, Rinse 2, Rinse 3, and an Exhaust. All cycle phases are adjustable from 0-60 minutes. All wash and rinse treatments are recirculated under pump pressure. The cycle, once activated, is completely automatic. Additional cycle treatment phases are available.

Operation

At the start of the processing period, the user places the load to be cleaned n the chamber, closes the door, selects the desired cycle and presses the cycle start button. The washer automatically proceeds through the treatment process and alerts the user when the process is complete. The user then opens the chamber door and removes the cleaned load.

Treatment Schedule

PREWASH

Hot water from house supply fills the sump or water remaining in the sump from Rinse 3 of the previous cycle is recirculated through the jet spray system under pump pressure and pumped to drain upon completion. Phase time and temperature is user programmable form 0-60 minutes and from 120 - 190°F respectively.

WASH 1

Hot water from the house supply fills the sump and the wash agent is automatically added. The treatment solution is recirculated through the jet spray system and is pumped to drain upon completion. The phase time and temperature are user-programmable from 0 to 60 minutes and from 120 - 190°F respectively.

Soak Option: A subsequent soak period may be programmed from 0-60 minutes, to permit the detergent solution to work on the load before proceeding to the second wash and/or rinse treatments.

WASH 2

Hot water from the house supply fills the sump and the wash agent is automatically added. The treatment solution is recirculated through the jet spray system and is pumped to drain upon completion. The phase time and temperature are user-programmable from 0 to 60 minutes and from 120 - 190°F respectively.

Soak Option: A subsequent soak period may be programmed from 0-60 minutes, to permit the detergent solution to work on the load before proceeding to the rinse treatments.

RINSE 1

Hot water from the house supply fills the sump and is recirculated through the jet spray system under pump pressure and pumped to drain upon completion. The phase time and temperature are user-programmable from 0 to 60 minutes and from 120 - 190°F respectively.

RINSE 2

Hot water from the house supply fills the sump and is recirculated through the jet spray system under pump pressure and pumped to drain upon completion. The phase time and temperature are user-programmable from 0 to 60 minutes and from 120 to 190°F respectively.

RINSE 3

Hot water from the house supply fills the sump and is recirculated through the jet spray system under pump pressure and pumped to drain upon completion. The phase time and temperature are user-programmable from 0 to 60 minutes and from 120 - 190°F respectively.

> Non-Recirculated Option: Hot water from house supply under house pressure is sprayed directly through a separate jet system and is drained upon completion. Phase time is user programmable from 0 - 60 minutes.

EXHAUST or VAPOR REMOVAL

The unit stands idle for a sufficient period of time to allow the facility vent system to remove vapor from within the chamber. The phase time is user-programmable from 0 to 60 minutes.

TEMPERATURE GUARANTEE SYSTEM:

All phases of the wash cycle except Soak and Exhaust have the option to select a Temperature Guarantee Mode. When selected, this causes the unit to fill and spray water normally for that phase, without allowing the main timer to start counting down until the set-point temperature has been attained. If at any time the sump temperature should fall below the set-point, the main timer stops until the temperature exceeds the set-point. Failure to do so in a set period of time generates a “too long to heat” alarm.

Section 2 The Control Panel

INTRODUCTION

Your unit has one of the following control panels:

- TOUCH CONTROL PANEL (TCP), see page 2–2
- LED CONTROL PANEL, see page 2–16

The Control Panel on this unit provides the user with an interface linked to the Programmable Logic Controller (PLC) located in the Control Box. Using this panel, the user is able to:

- Select a processing cycle.
- Program cycle phase timing
- Program cycle phase temperature
- Start a processing cycle
- Monitor the status of an ongoing cycle.
- Manually drain the washer's sump.

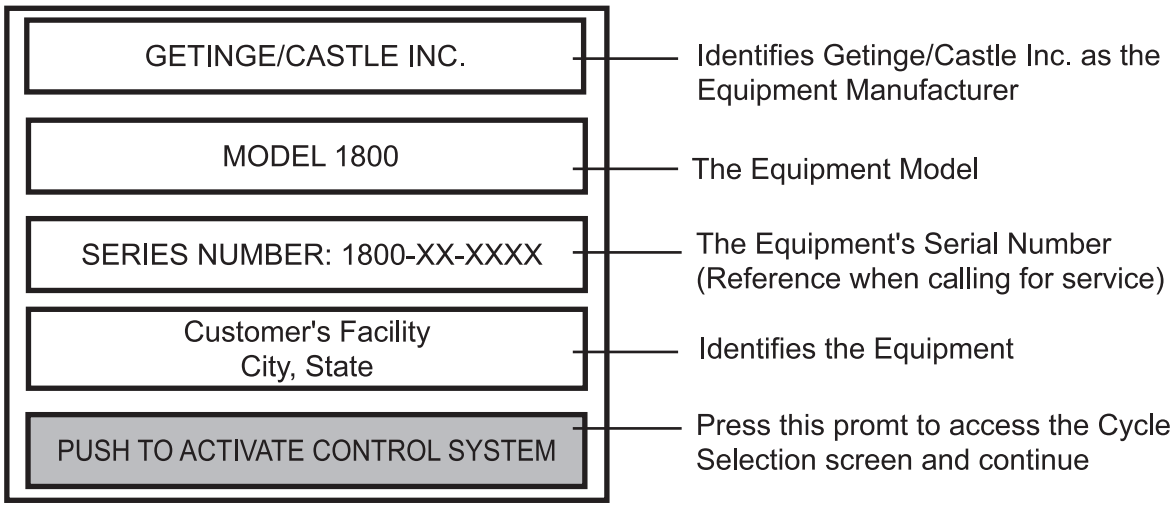
In addition to the above, supervisory personnel are able to do:

- Access load counters and time display
- Protect cycle programming

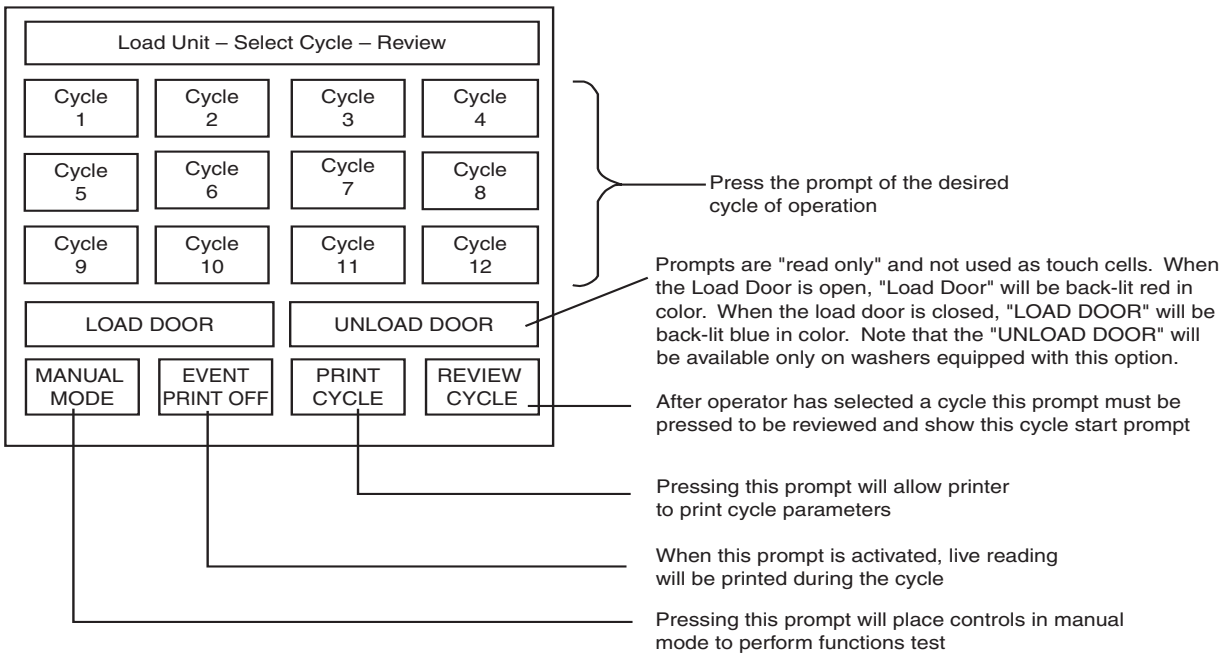
TOUCH CONTROL PANEL (TCP)

Control Screens

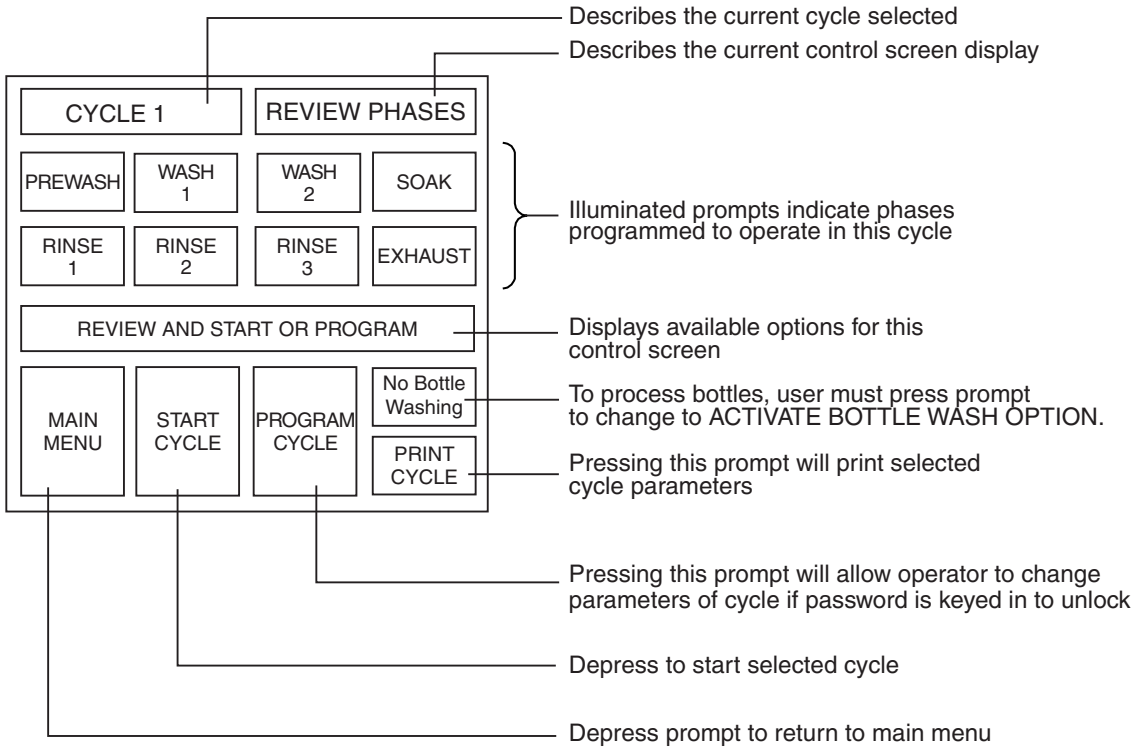
MACHINE CUSTOMER IDENTIFICATION SCREEN

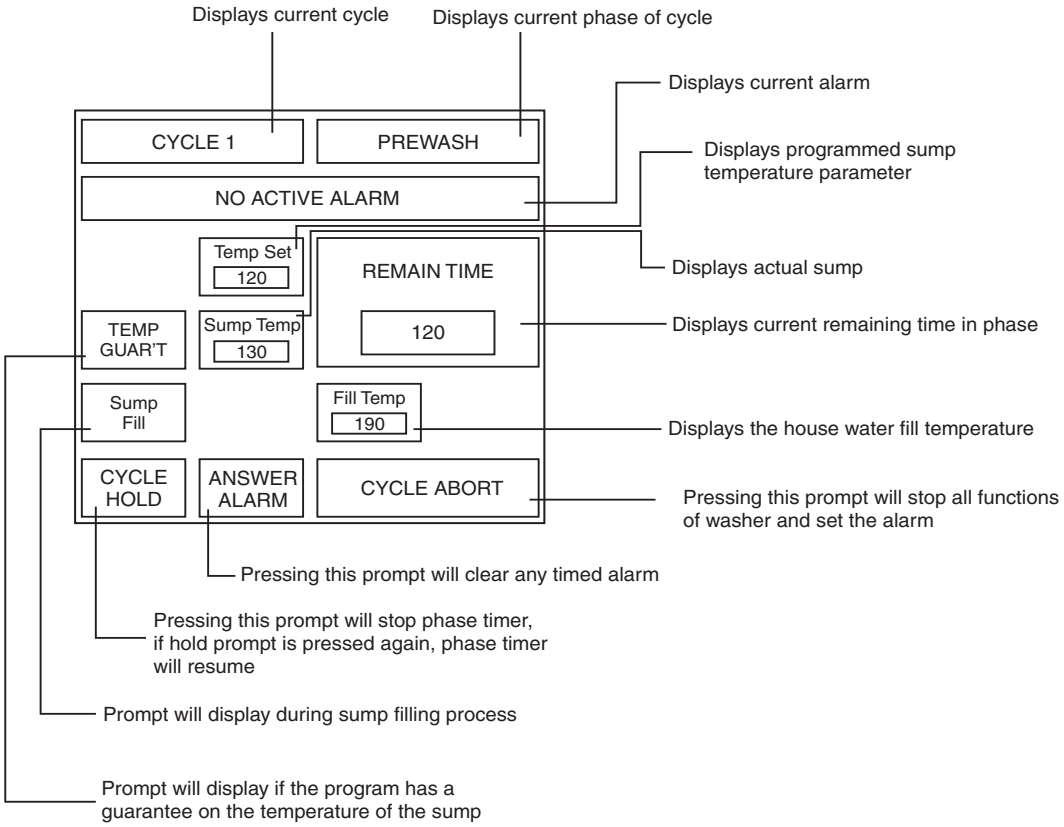

GETINGE/CASTLE INC.
Identifies Getinge/Castle Inc. as the Equipment Manufacturer
MODEL 1800
The Equipment Model
SERIES NUMBER: 1800-XX-XXXX
The Equipment's Serial Number (Reference when calling for service)
Customer's Facility City, State
Identifies the Equipment
PUSH TO ACTIVATE CONTROL SYSTEM
Press this promt to access the Cycle Selection screen and continue

CYCLE SELECTION SCREEN

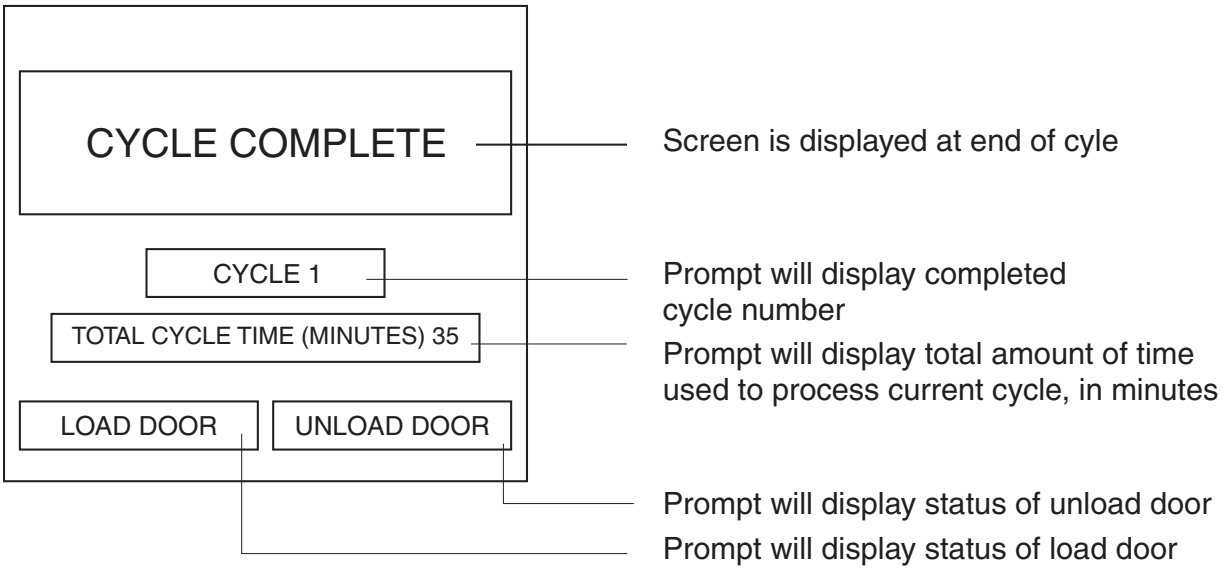

Load Unit – Select Cycle – Review
Cycle 1
Cycle 2
Cycle 3
Cycle 4
Cycle 5
Cycle 6
Cycle 7
Cycle 8
Cycle 9
Cycle 10
Cycle 11
Cycle 12
LOAD DOOR
UNLOAD DOOR
MANUAL MODE
EVENT PRINT OFF
PRINT CYCLE
REVIEW CYCLE
Press the prompt of the desired cycle of operation
Prompts are "read only" and not used as touch cells. When the Load Door is open, "Load Door" will be back-lit red in color. When the load door is closed, "LOAD DOOR" will be back-lit blue in color. Note that the "UNLOAD DOOR" will be available only on washers equipped with this option.
After operator has selected a cycle this prompt must be pressed to be reviewed and show this cycle start prompt
Pressing this prompt will allow printer to print cycle parameters
When this prompt is activated, live reading will be printed during the cycle
Pressing this prompt will place controls in manual mode to perform functions test

REVIEW PROGRAMMED PHASES SCREEN

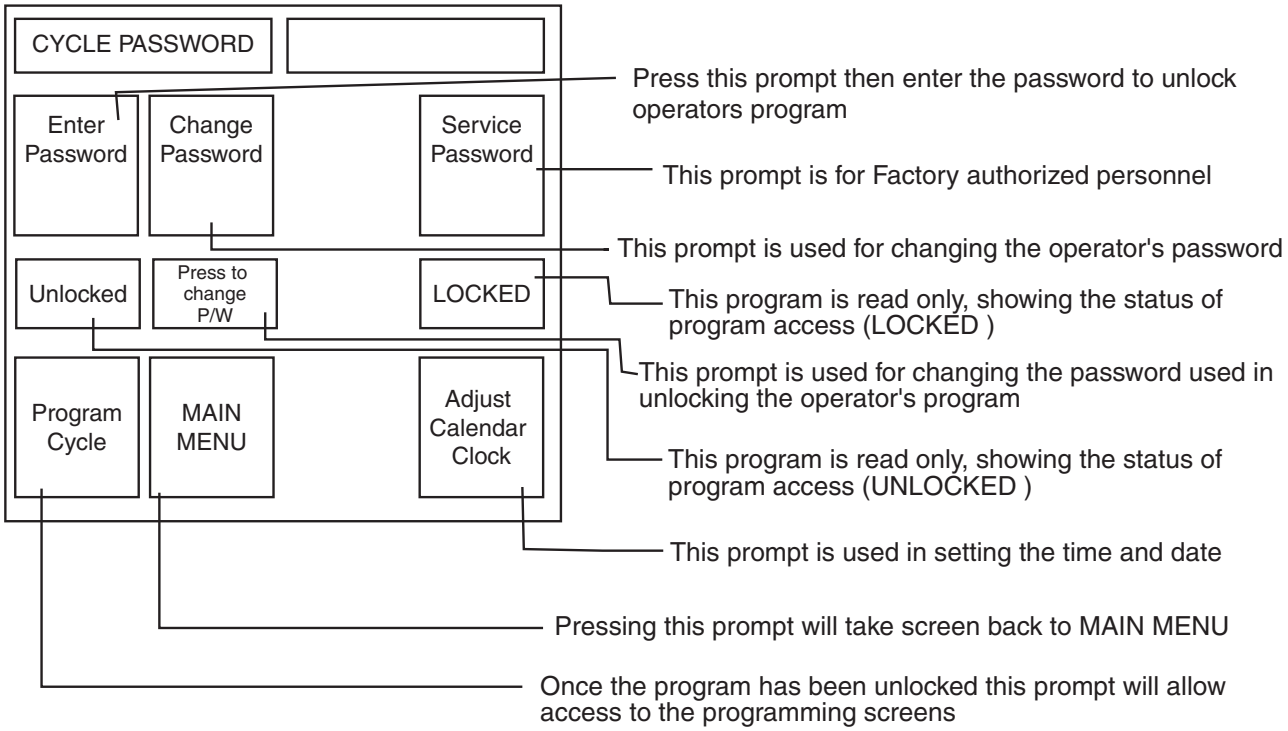

CYCLE 1
REVIEW PHASES
PREWASH
WASH 1
WASH 2
SOAK
RINSE 1
RINSE 2
RINSE 3
EXHAUST
REVIEW AND START OR PROGRAM
MAIN MENU
START CYCLE
PROGRAM CYCLE
No Bottle Washing
PRINT CYCLE
Describes the current cycle selected
Describes the current control screen display
Illuminated prompts indicate phases programmed to operate in this cycle
Displays available options for this control screen
To process bottles, user must press prompt to change to ACTIVATE BOTTLE WASH OPTION.
Pressing this prompt will print selected cycle parameters
Pressing this prompt will allow operator to change parameters of cycle if password is keyed in to unlock
Depress to start selected cycle
Depress prompt to return to main menu


Displays current cycle
Displays current phase of cycle
Displays current alarm
Displays programmed sump temperature parameter
Displays actual sump
Displays current remaining time in phase
Displays the house water fill temperature
Pressing this prompt will stop all functions of washer and set the alarm
Pressing this prompt will clear any timed alarm
Pressing this prompt will stop phase timer, if hold prompt is pressed again, phase timer will resume
Prompt will display during sump filling process
Prompt will display if the program has a guarantee on the temperature of the sump
CYCLE 1
PREWASH
NO ACTIVE ALARM
Temp Set
120
REMAIN TIME
120
TEMP GUAR'T
Sump Temp
130
Sump Fill
Fill Temp
190
CYCLE HOLD
ANSWER ALARM
CYCLE ABORT

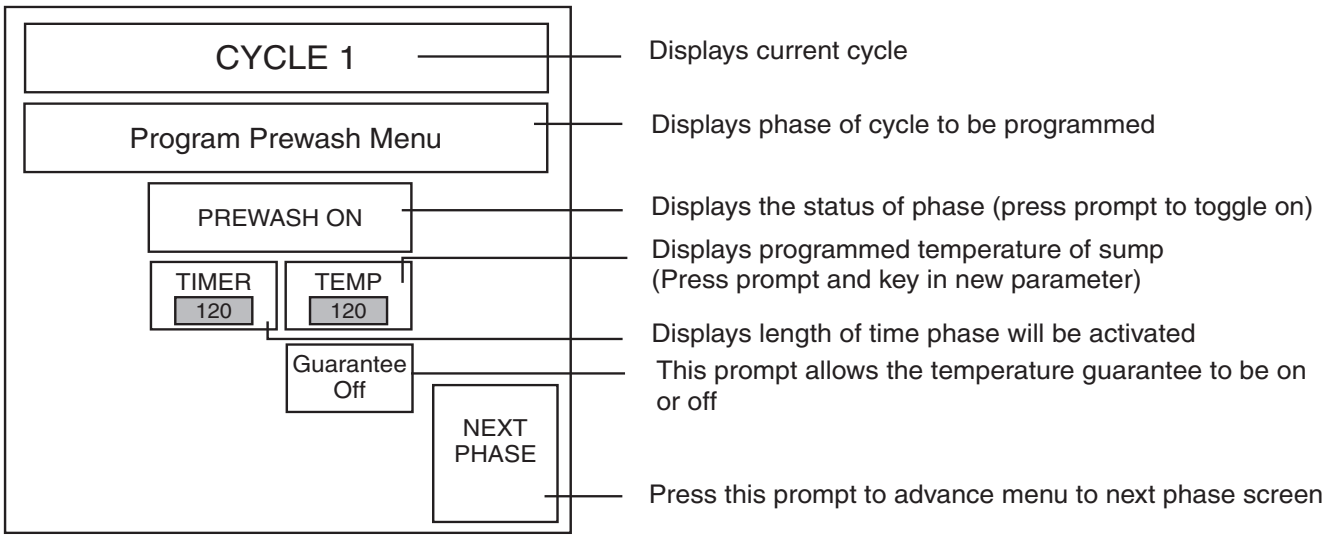
Cycle Complete Screen


CYCLE COMPLETE
Screen is displayed at end of cyle
CYCLE 1
Prompt will display completed cycle number
TOTAL CYCLE TIME (MINUTES) 35
Prompt will display total amount of time used to process current cycle, in minutes
LOAD DOOR
UNLOAD DOOR
Prompt will display status of unload door
Prompt will display status of load door

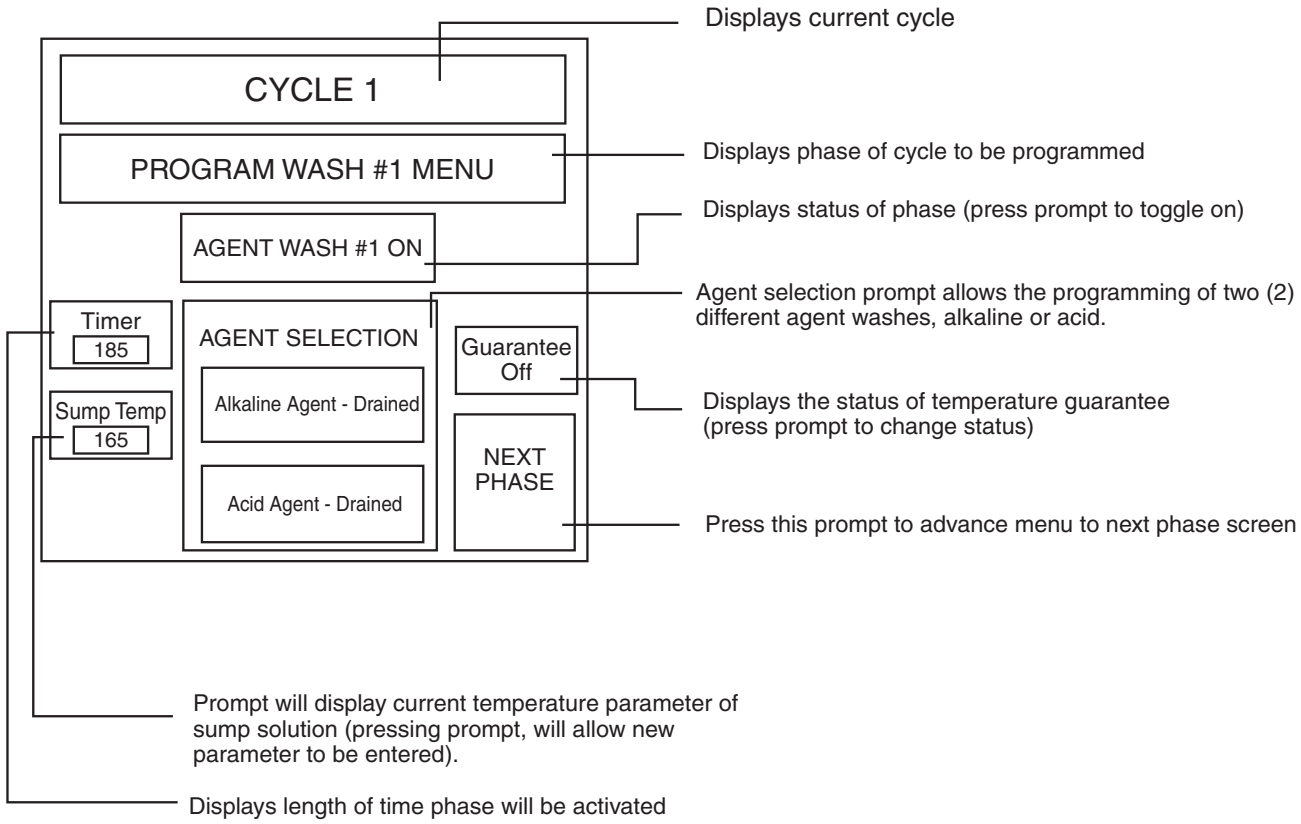
Program Change Screen


CYCLE PASSWORD
Enter Password
Change Password
Service Password
Unlocked
Press to change P/W
LOCKED
Program Cycle
MAIN MENU
Adjust Calendar Clock
Press this prompt then enter the password to unlock operators program
This prompt is for Factory authorized personnel
This prompt is used for changing the operator's password
This program is read only, showing the status of program access (LOCKED)
This prompt is used for changing the password used in unlocking the operator's program
This program is read only, showing the status of program access (UNLOCKED)
This prompt is used in setting the time and date
Pressing this prompt will take screen back to MAIN MENU
Once the program has been unlocked this prompt will allow access to the programming screens

Program Prewash #1 Screen

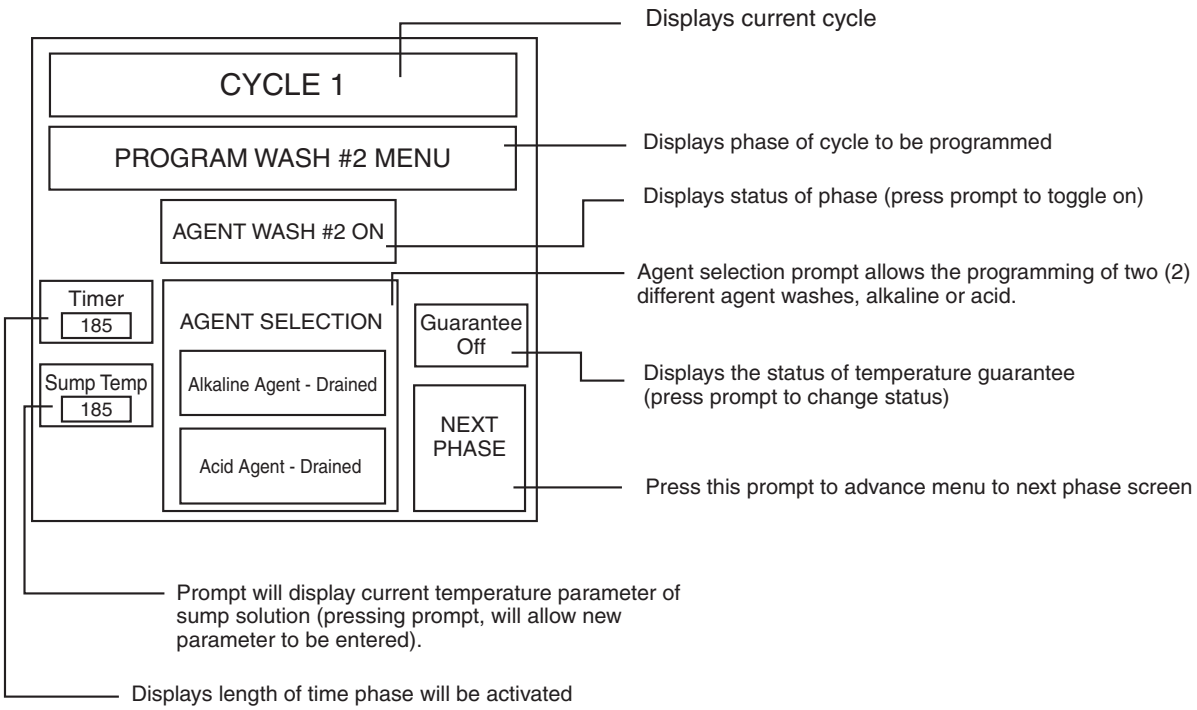

CYCLE 1
Program Prewash Menu
PREWASH ON
TIMER
120
TEMP
120
Guarantee Off
NEXT PHASE
Displays current cycle
Displays phase of cycle to be programmed
Displays the status of phase (press prompt to toggle on)
Displays programmed temperature of sump (Press prompt and key in new parameter)
Displays length of time phase will be activated
This prompt allows the temperature guarantee to be on or off
Press this prompt to advance menu to next phase screen

Program Wash #1 Screen


Displays current cycle
CYCLE 1
PROGRAM WASH #1 MENU
Displays phase of cycle to be programmed
AGENT WASH #1 ON
Displays status of phase (press prompt to toggle on)
Agent selection prompt allows the programming of two (2) different agent washes, alkaline or acid.
Timer
185
AGENT SELECTION
Guarantee Off
Displays the status of temperature guarantee (press prompt to change status)
Sump Temp
165
Alkaline Agent - Drained
NEXT PHASE
Press this prompt to advance menu to next phase screen
Acid Agent - Drained
Prompt will display current temperature parameter of sump solution (pressing prompt, will allow new parameter to be entered).
Displays length of time phase will be activated

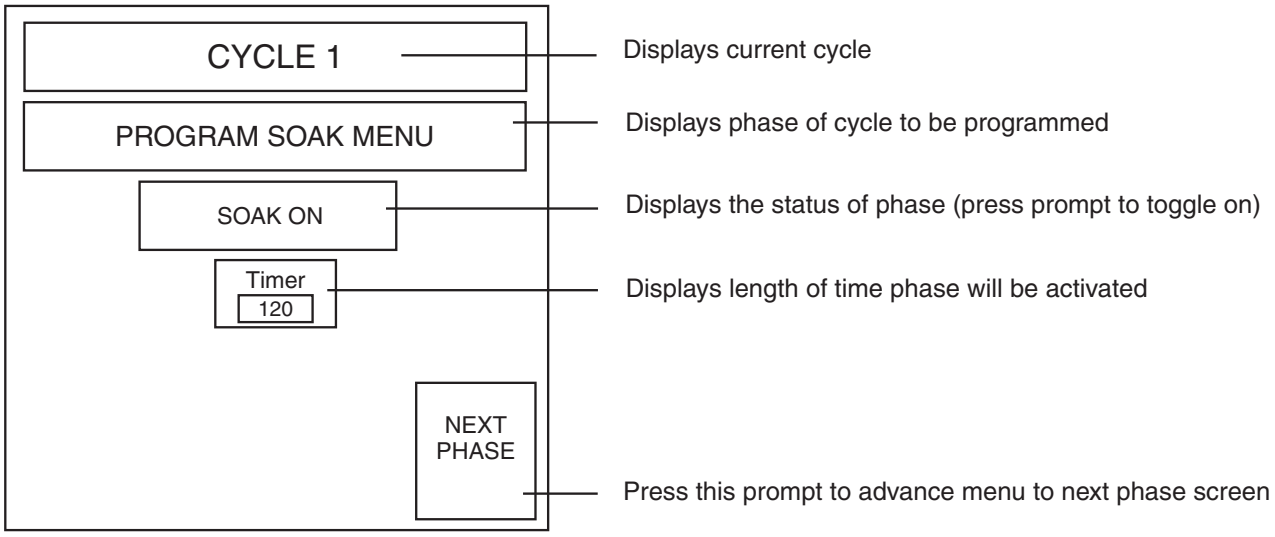
NOTE: SOME FEATURES SHOWN ON THE TOUCH PANEL MAY NOT BE AVAILABLE IF OPTIONS WERE NOT SELECTED.

Program Wash #2 Screen

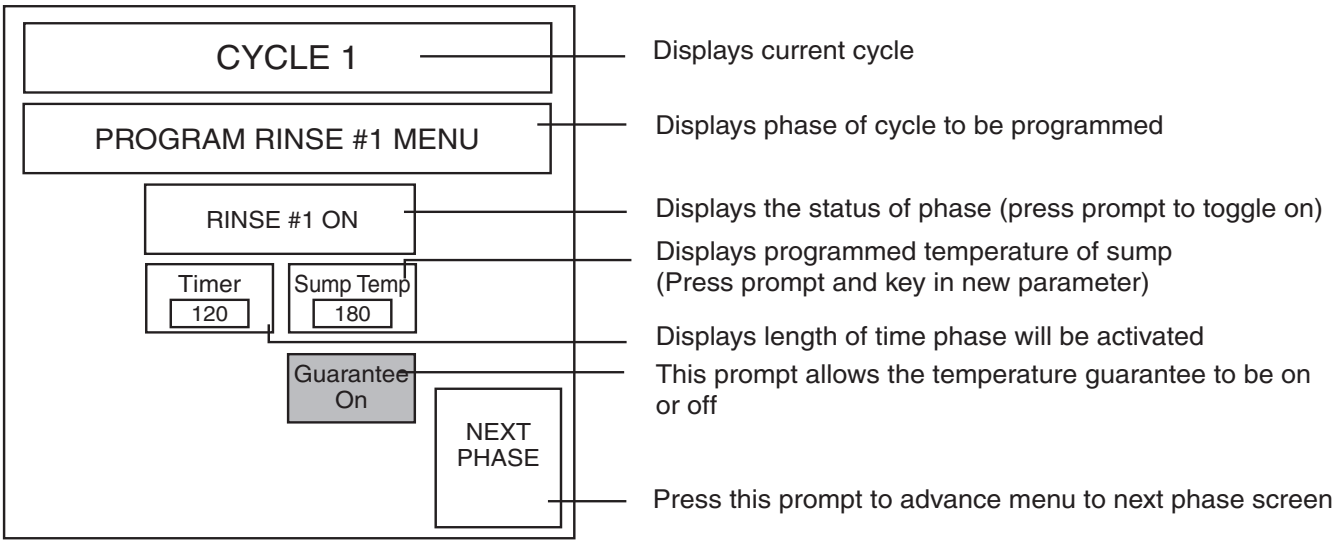

CYCLE 1
PROGRAM WASH #2 MENU
AGENT WASH #2 ON
Timer
185
Sump Temp
185
AGENT SELECTION
Alkaline Agent - Drained
Acid Agent - Drained
Guarantee
Off
NEXT
PHASE
Displays current cycle
Displays phase of cycle to be programmed
Displays status of phase (press prompt to toggle on)
Agent selection prompt allows the programming of two (2) different agent washes, alkaline or acid.
Displays the status of temperature guarantee (press prompt to change status)
Press this prompt to advance menu to next phase screen
Prompt will display current temperature parameter of sump solution (pressing prompt, will allow new parameter to be entered).
Displays length of time phase will be activated

NOTE: SOME FEATURES SHOWN ON THE TOUCH PANEL MAY NOT BE AVAILABLE IF OPTIONS WERE NOT SELECTED.

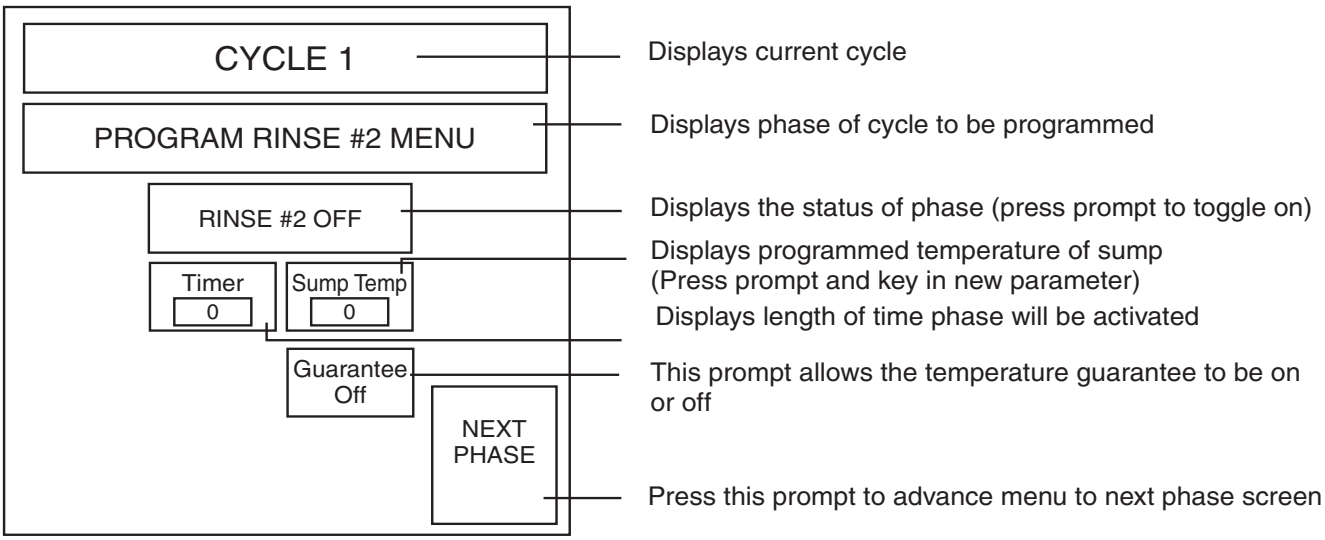
Program Soak Screen


CYCLE 1
PROGRAM SOAK MENU
SOAK ON
Timer
120
NEXT
PHASE
Displays current cycle
Displays phase of cycle to be programmed
Displays the status of phase (press prompt to toggle on)
Displays length of time phase will be activated
Press this prompt to advance menu to next phase screen

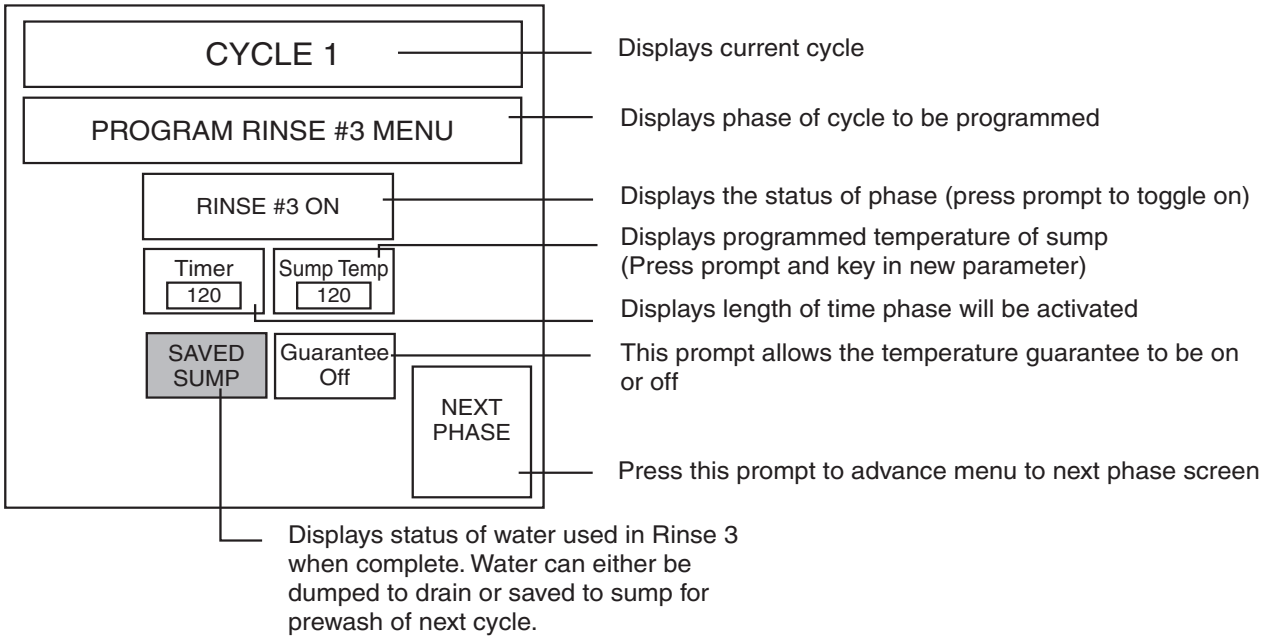
Program Rinse #1 Screen


CYCLE 1
PROGRAM RINSE #1 MENU
RINSE #1 ON
Timer
120
Sump Temp
180
Guarantee
On
NEXT
PHASE
Displays current cycle
Displays phase of cycle to be programmed
Displays the status of phase (press prompt to toggle on)
Displays programmed temperature of sump
(Press prompt and key in new parameter)
Displays length of time phase will be activated
This prompt allows the temperature guarantee to be on
or off
Press this prompt to advance menu to next phase screen

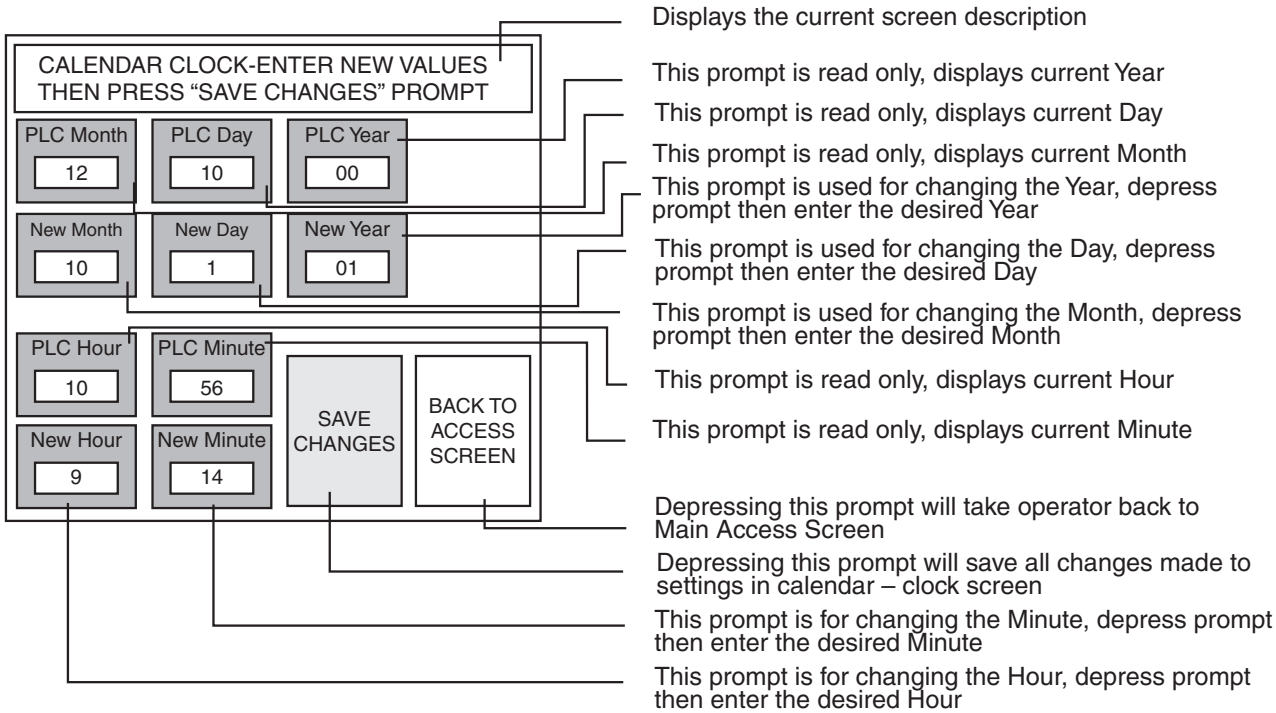
Program Rinse #2 Screen


CYCLE 1
PROGRAM RINSE #2 MENU
RINSE #2 OFF
Timer
0
Sump Temp
0
Guarantee
Off
NEXT
PHASE
Displays current cycle
Displays phase of cycle to be programmed
Displays the status of phase (press prompt to toggle on)
Displays programmed temperature of sump
(Press prompt and key in new parameter)
Displays length of time phase will be activated
This prompt allows the temperature guarantee to be on
or off
Press this prompt to advance menu to next phase screen

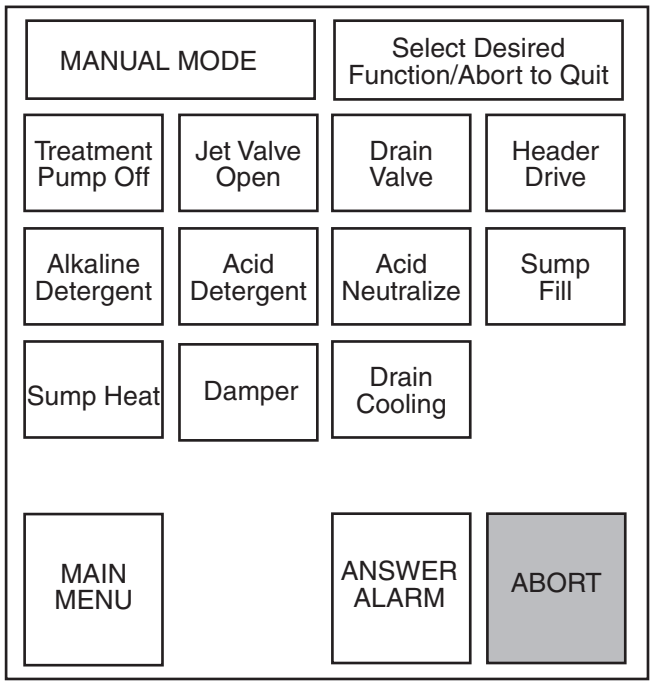
Program Rinse #3 Screen


CYCLE 1
PROGRAM RINSE #3 MENU
RINSE #3 ON
Timer
120
Sump Temp
120
SAVED SUMP
Guarantee Off
NEXT PHASE
Displays current cycle
Displays phase of cycle to be programmed
Displays the status of phase (press prompt to toggle on)
Displays programmed temperature of sump (Press prompt and key in new parameter)
Displays length of time phase will be activated
This prompt allows the temperature guarantee to be on or off
Press this prompt to advance menu to next phase screen
Displays status of water used in Rinse 3 when complete. Water can either be dumped to drain or saved to sump for prewash of next cycle.

Calendar Clock


CALENDAR CLOCK-ENTER NEW VALUES THEN PRESS "SAVE CHANGES" PROMPT
PLC Month
12
PLC Day
10
PLC Year
00
New Month
10
New Day
1
New Year
01
PLC Hour
10
PLC Minute
56
New Hour
9
New Minute
14
SAVE CHANGES
BACK TO ACCESS SCREEN
Displays the current screen description
This prompt is read only, displays current Year
This prompt is read only, displays current Day
This prompt is read only, displays current Month
This prompt is used for changing the Year, depress prompt then enter the desired Year
This prompt is used for changing the Day, depress prompt then enter the desired Day
This prompt is used for changing the Month, depress prompt then enter the desired Month
This prompt is read only, displays current Hour
This prompt is read only, displays current Minute
Depressing this prompt will take operator back to Main Access Screen
Depressing this prompt will save all changes made to settings in calendar – clock screen
This prompt is for changing the Minute, depress prompt then enter the desired Minute
This prompt is for changing the Hour, depress prompt then enter the desired Hour

MANUAL MODE SCREEN



Press any prompt to activate selected components. Press prompt again to stop selected component or "ABORT" to stop all components activated.

All safety interlocks are intact in the manual mode. The wash or rinse pumps will not operate if there is not enough water in the sump. The Wash pump will operate for 60 seconds without water.

Sump fill will not activate if sump is full. Sump fill will stop when sump is full.

ACCESSING THE MANUAL MODE SCREEN

1.From the CUSTOMER IDENTIFICATION screen, press “PUSH TO ACTIVATE CONTROL SYSTEM”

2. From the CYCLE SELECTION screen, Press “MANUAL MODE”.

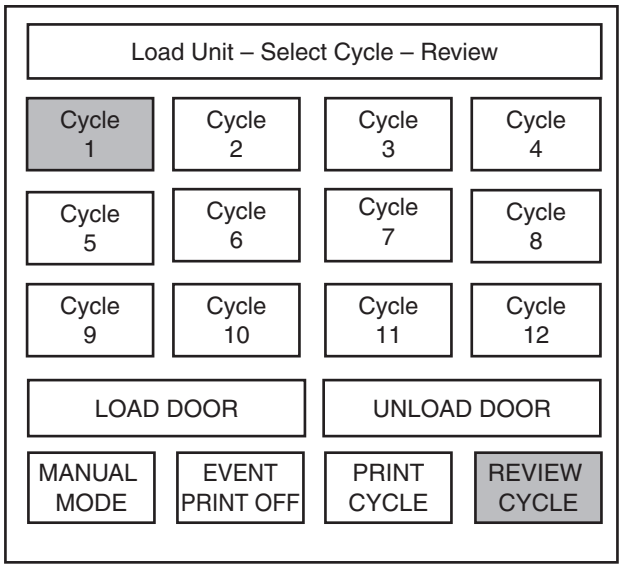
Your screen may be different from the one shown. This screen shows all options for the machine. Your machjine may not have all these features installed.

Cycle Programming

Example: Programming a Sample Cycle

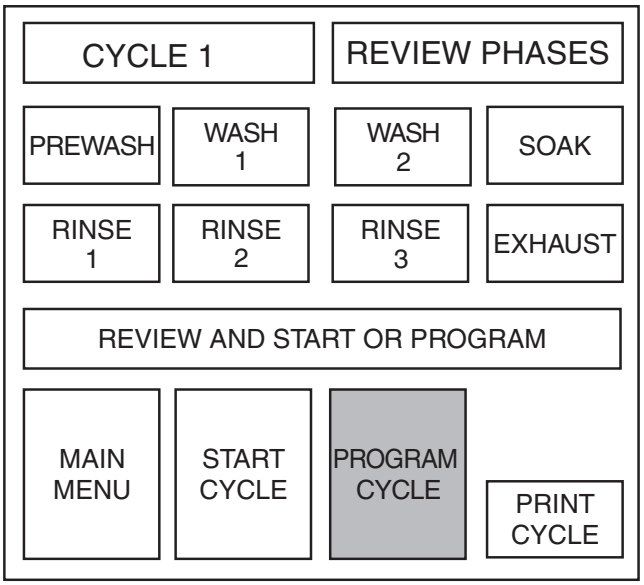
The following is a SAMPLE cycle along with detailed instructions on how to program the cycle for your reference.

PHASE	TIME (seconds)	TEMPERATURE (°F)	TEMPERATURE GUARANTEE	SAVE/DUMP TO DRAIN	AGENT
Sample Cycle 1—Touch Control Panel					
Pre-wash	60	120	Off		
Wash 1	300	170	Guaranteed		Acid
Wash 2	300	170	Off		Alkaline
Soak	None				
Rinse 1	120	180	Guaranteed		
Rinse 2	0	0	Off		
Rinse 3	60	120	Off	Save	



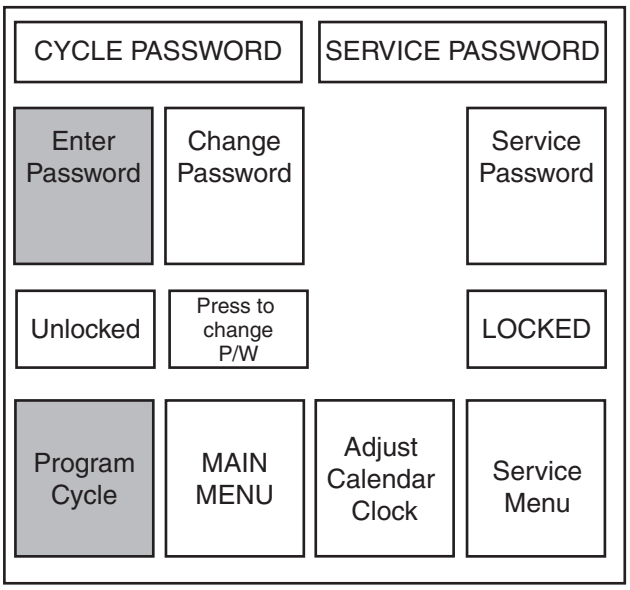
CYCLE SELECTION SCREEN:
Programmer should-

➢ Press CYCLE 1 prompt
➢ Select REVIEW CYCLE



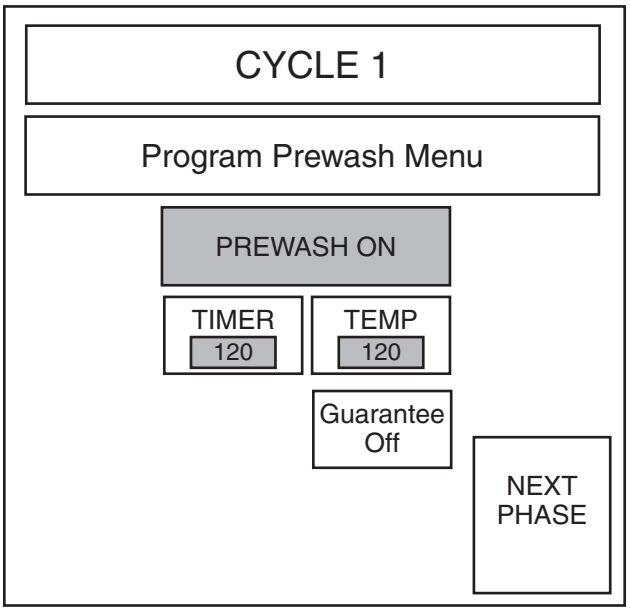
CYCLE SELECTION SCREEN
Programmer should-

➢ Select PROGRAM CYCLE to enter the access screen



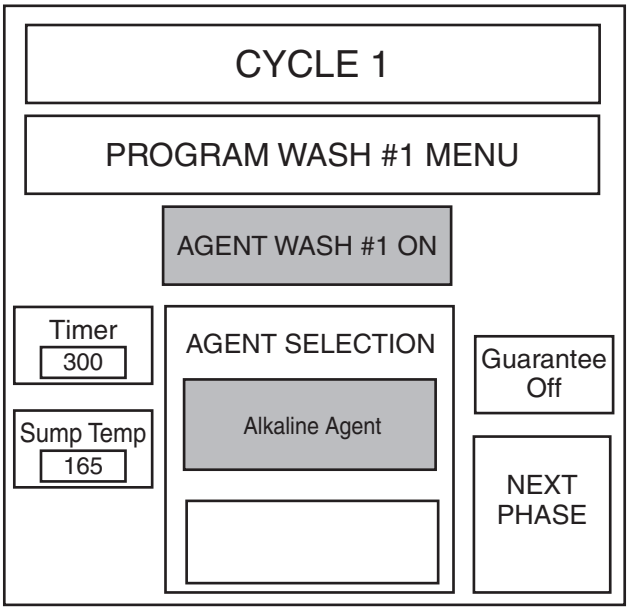
CYCLE SELECTION SCREEN
Programmer should-

➢ Press ENTER PASSWORD prompt
➢ Type in correct password “12345”, press ENTER, then press DONE. This will unlock the system.
➢ Select PROGRAM CYCLE



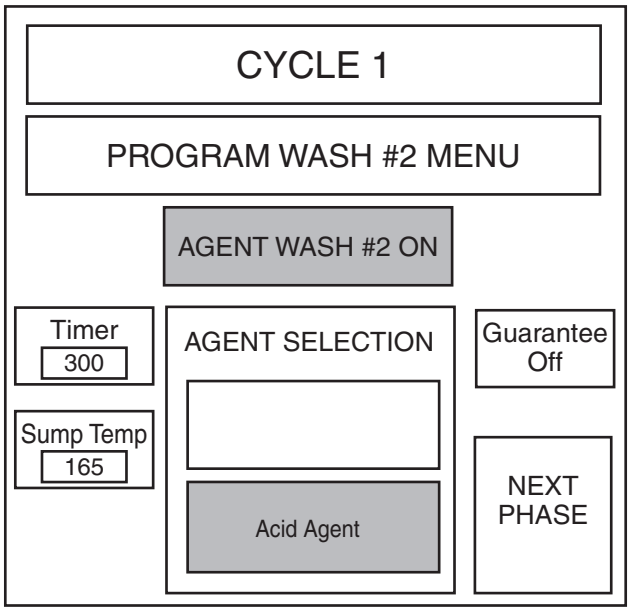
CYCLE SELECTION SCREEN:
Programmer should-

- ➢ Press PREWASH to set the phase ON.
- ➢ Select TIMER, set phase time to 60 seconds.
- ➢ Select TEMP, set temperature to 120°F.
- ➢ Press NEXT PHASE button when all paramteters are set.



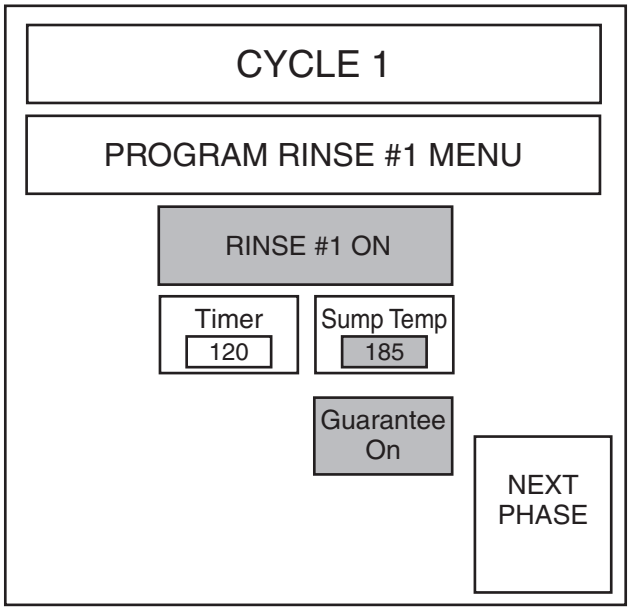
CYCLE SELECTION SCREEN:
Programmer should-

- ➢ Press AGENT WASH #1 prompt to ON.
- ➢ Set phase time to 300 seconds.
- ➢ Set phase temp to 165°F .
- ➢ Set tank #1 to 165°F
- ➢ Press TEMP GUARANTEE button to OFF.
- ➢ Press AGENT WASH #1 prompt to ON.



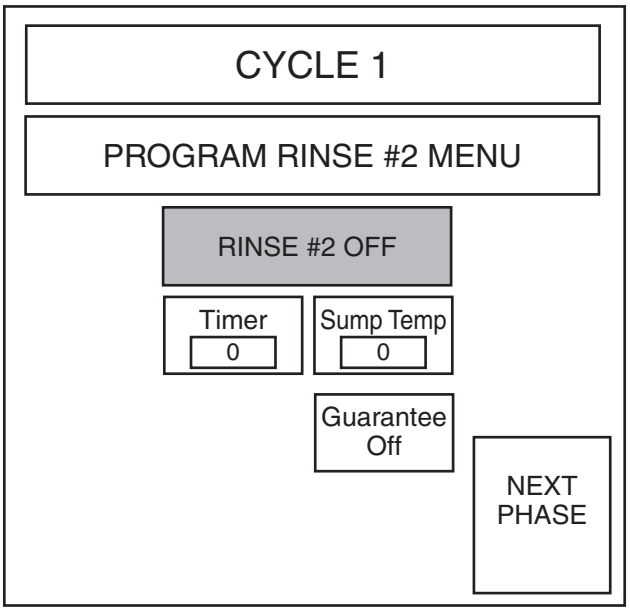
CYCLE SELECTION SCREEN:
Programmer should-

➢ Press AGENT WASH #2 prompt to ON.
➢ Set phase time to 300 seconds.
➢ Set phase temp to 165°F.
➢ Press temp guarantee button to OFF.
➢ Select ALKALINE AGENT for the agent selection.
➢Press NEXT PHASE to continue.



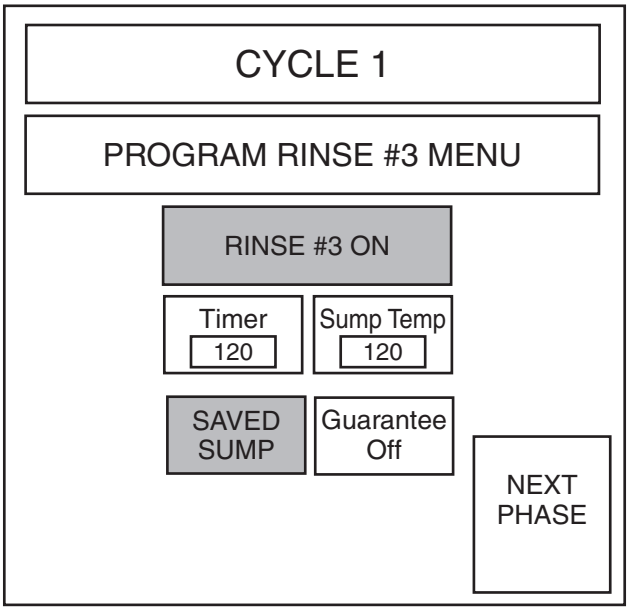
CYCLE SELECTION SCREEN:
Programmer should-

➢ Press RINSE #1 prompt to ON.
➢ Set phase time to 120 seconds.
➢ Set phase temp to 185°F.
➢ Press temp guarantee button to ON.
➢ Press NEXT PHASE to continue.



CYCLE SELECTION SCREEN:
Programmer should-

➢Press RINSE #2 prompt to OFF.
➢ Set phase time to 30 seconds.
➢ Set phase temp to 140°F.
➢ Set GUARANTEE to OFF.
➢Press NEXT PHASE to continue.

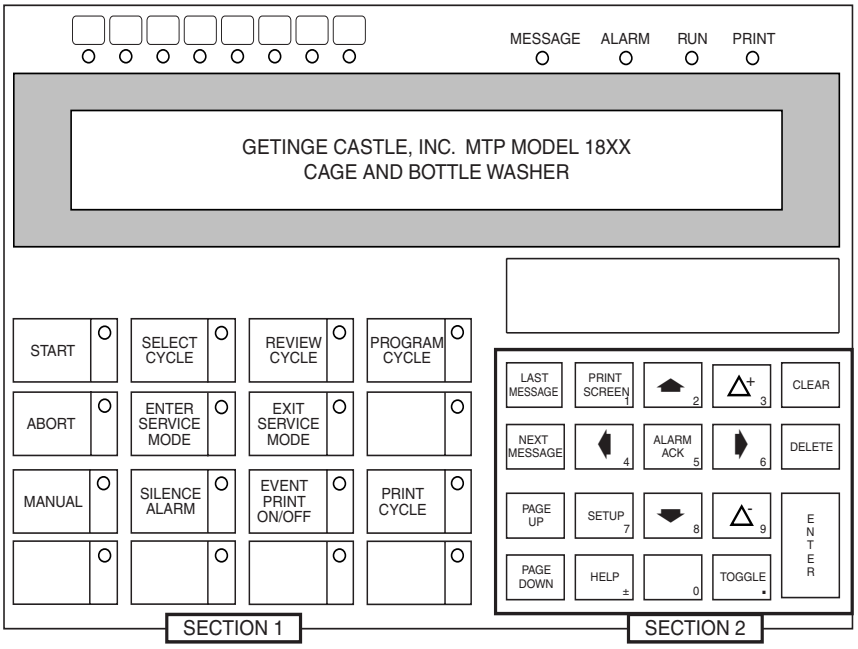


CYCLE SELECTION SCREEN:
Programmer should-

➢ Depress RINSE #3 prompt to “on”.
➢ Set phase time to 60seconds.
➢ Set phase temp to 180°F.
➢ Set to GUARANTEE to OFF
➢Set phase to SAVED SUMP
➢Press NEXT PHASE to continue.

LED CONTROL PANEL

Key Locations

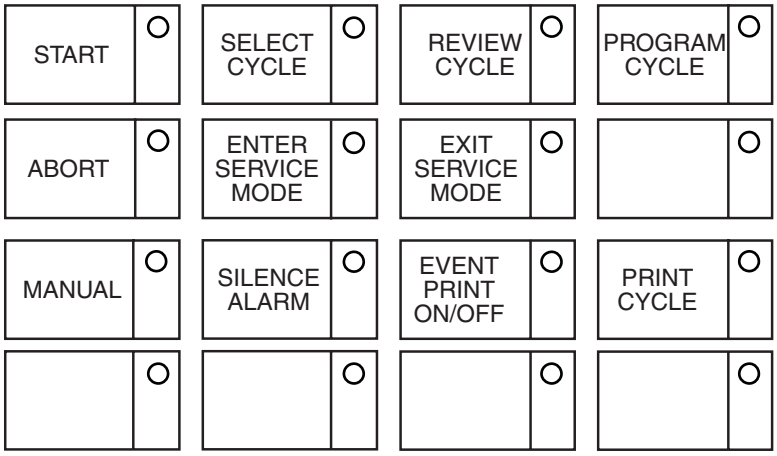


The above screen has been separated into 2 sections

- Section 1— Function keys
- Section 2— Data Entry keys

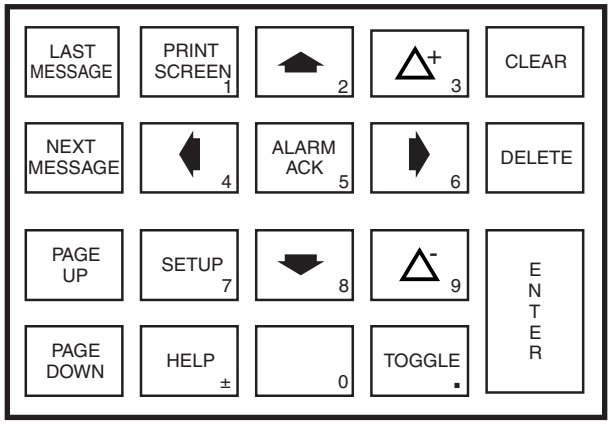
Information on each section follows.

Section 1— Function keys



FUNCTION KEY	FUNCTION
START	Start the selected cycle.
ABORT	Stop all functions of washer.
MANUAL MODE	Enter the manual mode.
SELECT CYLES	Access cycle selection screen.
ENTER SERVICE MODE	For authorized service technician only.
SILENCE ALARM	Silence audible alarm.
REVIEW CYCLE	Review selected cycle
EXIT SERVICE MODE	Exit service mode and return to stand-by screen.
EVENT PRINT ON/OFF	Record live readings of selected cycle as load is being processed
PROGRAM CYCLE	Access selected cycle program for parameter changes.
PRINT CYCLE	Print parameters of selected cycle.

Section 2— Data Entry keys



Key/Function		
LAST MESSAGE — Used to review last screen	HELP ± — Used to receive help information	- 9 — Used for the #9
NEXT MESSAGE — Used to review next available screen	2 — Used for the #2 or to move cursor up	TOGGLE . — Used to activate components or deactivate components in Manual Mode.
PAGE UP — Used to scroll to previous page	ALARM ACK 5 — Used for the #5	CLEAR — Used to clear old parameters
PAGE DOWN — Used to scroll to next page	8 — Used for the #8 or to move cursor down	DELETE — Not used
PRINT SCREEN 1 — Used for the #1	0 — Used for the #0	ENTER — Used to enter new parameter
4 — Used for the #4 or to move cursor left	+ 3 — Used for the #3	
SETUP 7 — Used for the #7 or place TCP into direct MODEM contact	6 — Used for the #6 or to move cursor right	

Control Sequences

START UP

Turn the power on to the unit. The unit runs a diagnostic test. Once the controller runs the test, the display screen shows “MTP Model 18XX Cage and Bottle Washer. The unit is now in the standby mode and ready to be used or programmed.

OPERATION

At the start of the processing period, the user activates the unit for automatic operation. The unit automatically advances to the READY state when the required operational conditions are attained.

The operator places the load to be cleaned in the chamber, closes the chamber door, selects the desired cycle and presses the cycle start switch. The washer automatically proceeds through the treatment process and alerts the user when the process is complete. The user then opens the chamber door and removes the cleaned load.

At the end of the processing period, the user places the unit in the STANDBY mode. All processing functions stop and the sump and optional treatment solution storage tanks automatically drain.

ALARM

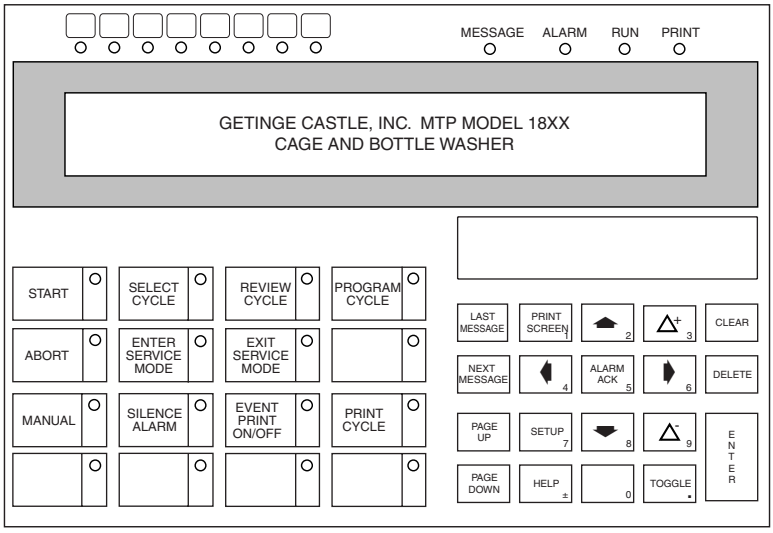
If an alarm should sound at any time, press “SILENCE ALARM” to turn the sound off, then follow the prompt on the display screen to solve the problem. Press “ALARM ACK” on the key-pad to return to the program.

HELP

A help screen is provided to assist the user. Pressing the “HELP” button on the keypad will give the user direction on what to do next.

Processing Cycle Screen Description

Standby Screen



From the STANDBY SCREEN user may choose:

1) CYCLE SELECTION, to select the desired cycle

2) REVIEW CYCLE, to review parameters of selected cycle.

3) MANUAL MODE, to test functions of individual components.

Cycle Selection

From STANDBY SCREEN (shown above)

Press SELECT CYCLE button (screen shown below).

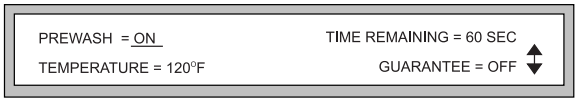
Press CLEAR.

Enter the number of the desired cycle (1 through 12) or use the cursor left or cursor right keys to review preset cycles (1 through 12).

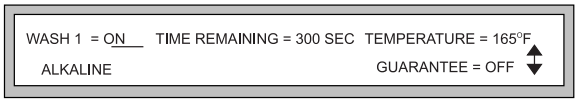
Press ENTER.

Review Cycle

REVIEW SCREEN #1.



REVIEW SCREEN #2.

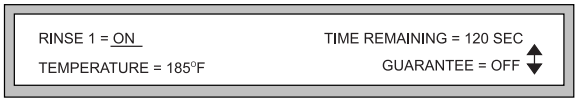


Pressing PAGE DOWN, user can view all parameters of the selected cycle

REVIEW SCREEN #3

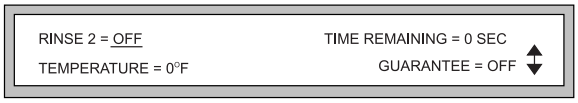
Pressing PAGE DOWN, user can view all parameters of the selected cycle

REVIEW SCREEN #4



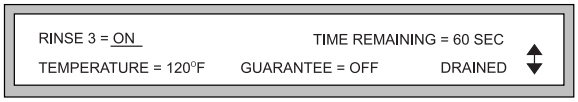
Pressing PAGE DOWN, user can view all parameters of the selected cycle

REVIEW SCREEN #5



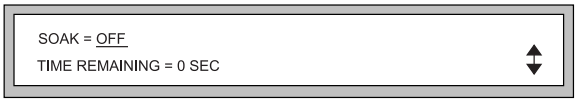
Pressing PAGE DOWN, user can view all parameters of the selected cycle

REVIEW SCREEN #6



Pressing PAGE DOWN, user can view all parameters of the selected cycle

REVIEW SCREEN #7



Pressing PAGE DOWN, user can view all parameters of the selected cycle

Manual Mode

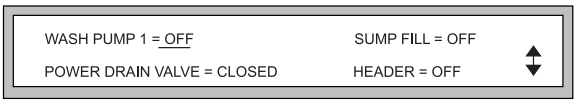
Manual mode allows the user or maintenance technician to test the functions of individual components

When MANUAL MODE is selected, the screen shows individual components that may be activated or deactivated. More than one component may be activated or deactivated at the same time. Press PAGE DOWN or PAGE UP to view more components.

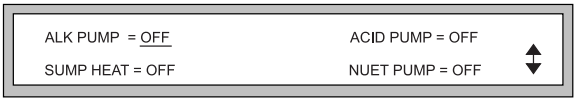
To activate or deactivate a component in Manual Mode:

1. Pressing PAGE DOWN or PAGE UP until the desired component shows.
2. Using the arrow keys, move the cursor to the desired component.
3. To activate the component, press TOGGLE (if conditions are correct).
4. To deactivate a component, press TOGGLE when the cursor is under the activated component.
5. To deactivate all components and return them to standby, press ABORT.

MANUAL SCREEN #1

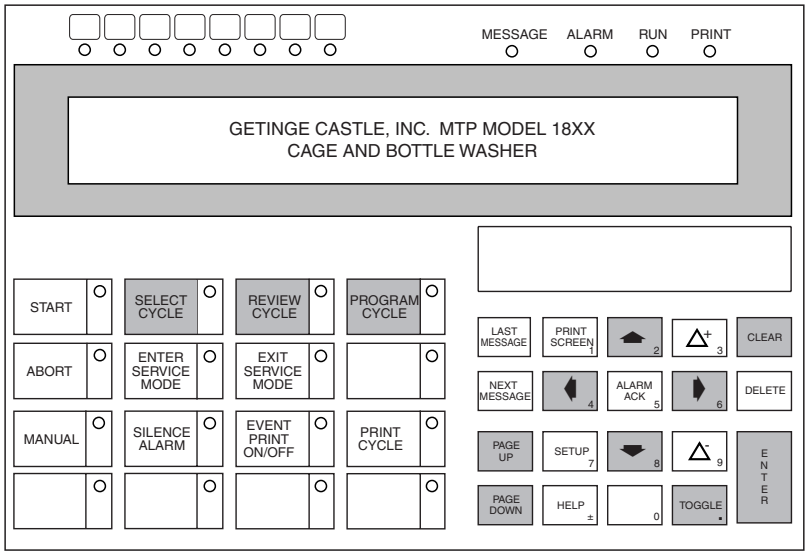


MANUAL SCREEN #2



MANUAL SCREEN #3

Cycle Programming



From the STANDBY SCREEN the user may change the parameters of the cycle by:

1. Pressing CYCLE SELECTION.
2. Pressing CLEAR.
3. Key in the cycle number.
4. Pressing ENTER.
5. Press the PAGE DOWN or PAGE UP buttons until the screen show the phase were the change needs to be made.
6. Using the arrow keys to move the cursor to the parameter that needs to be changed.
7. Press CLEAR
8. Enter new time or temperature
9. Press TOGGLE to turn ON or OFF status of phase.
10. Press “ENTER” to enter all changes.

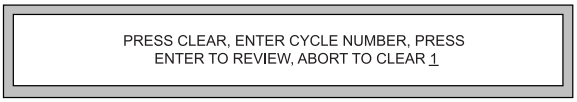
When all desired changes have been made.

11. Press REVIEW CYCLE to review changes or PROGRAM CYCLE to return to stand by screen
12. If equipped with a printer, pressing PRINT CYCLE will record new parameters on paper read out.

Cycle Selection

From STANDBY SCREEN (shown above)

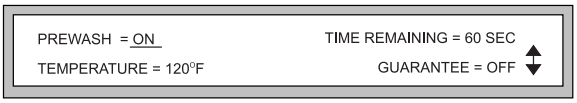
Press SELECT CYCLE button (screen shown below).



1. Press CLEAR.
2. Enter the number of the desired cycle (1 through 12)
3. Press ENTER.
4. Press PROGRAM CYCLE.
5. Press PAGE UP or PAGE DOWN until the desired screen appears.

Programming a Cycle

PROGRAM SCREEN #1.

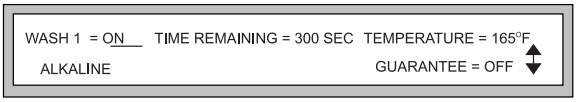


1. Using the arrow keys, move the cursor to the parameter to be changed.
2. Use TOGGLE to turn the parameter “on” or “off”.

To change numeric settings,

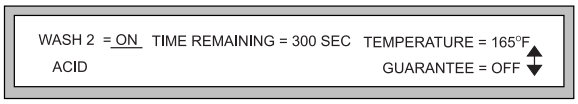
3. Press clear.
4. Key in the new settings.
5. Press ENTER to change parameters.

PROGRAM SCREEN #2.



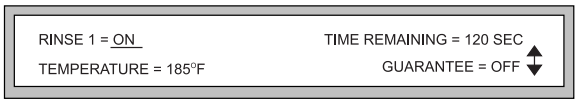
1. Press PAGE DOWN to view the parameters of the cycle.
2. To change parameters, follow the same steps as outlined in Program Screen #1.

PROGRAM SCREEN #3.



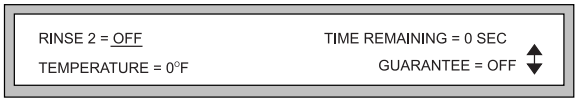
1. Press PAGE DOWN to view the parameters of the cycle.
2. To change parameters, follow the same steps as outlined in Program Screen #1.

PROGRAM SCREEN #4.



1. Press PAGE DOWN to view the parameters of the cycle.
2. To change parameters, follow the same steps as outlined in Program Screen #1.

PROGRAM SCREEN #5.



1. Press PAGE DOWN to view the parameters of the cycle.
2. To change parameters, follow the same steps as outlined in Program Screen #1.

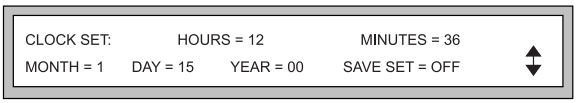
PROGRAM SCREEN #6.

1. Press PAGE DOWN to view the parameters of the cycle.
2. To change parameters, follow the same steps as outlined in Program Screen #1.

PROGRAM SCREEN #7.

1. Press PAGE DOWN to view the parameters of the cycle.
2. To change parameters, follow the same steps as outlined in Program Screen #1.

PROGRAM SCREEN #8.



When setting new parameters for DATE and TIME, enter desired changes and toggle SAVE SET to ON

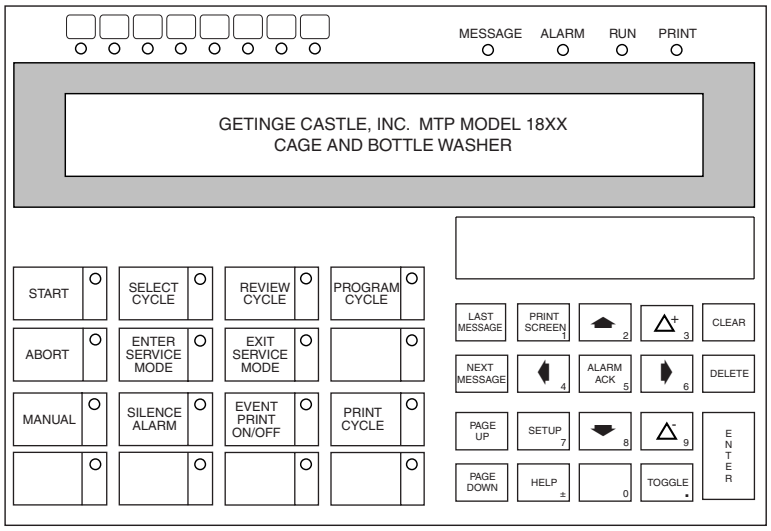
PROGRAM SCREEN #9.

To protect the program from unauthorized changes, enter a password here to lock out access to the PROGRAMING CYCLE phase of the program.

Example: Programming a Sample Cycle

The following is a SAMPLE cycle along with detailed instructions on how to program the cycle for your reference.

PHASE	TIME	TEMPERATURE (°F)	TEMPERATURE GUARANTEE	SAVE/DUMP TO DRAIN	AGENT
Sample Cycle 1					
Pre-wash	60 sec.	120°F	Off		
Wash 1	180 sec.	165ºF	Guaranteed		Alkaline
Wash 2	180 sec.	165°F	Off		Acid
Soak	None				
Rinse 1	120 sec.	185°F	Guaranteed		
Rinse 2	120 sec.	140°F	Off		
Rinse 3	60 sec.	120°F	Off	Save	



Start Up

Turn the power onto the unit. At this time, the unit will go through a diagnostic test, once the controller runs the test, the display screen will show, “MTP Model 18XX Cage and Bottle Washer.” The unit is now in the standby mode and ready to be used or programmed.

Programming

1. The user can program up to 12 different cycles. To begin, press SELECT CYCLE. At this time, the user will press CLEAR on the key pad, and input a cycle between

1 through 12 to be programmed, then press ENTER. This will bring up the REVIEW CYCLE screen of the phases in that cycle. Using the PAGE UP and PAGE DOWN buttons on the key pad the user can review each phase of that cycle. If the cycle needs to be programmed or changed the user will press PROGRAM CYCLE. The user is now ready to program each phase of the sample cycle above.

2. The Prewash phase can be turned on or off by using the TOGGLE button on the keypad. Toggle the prewash button to ON. Using the arrow keys on the keypad, move the cursor around each item on the phase. Move the cursor to the time and press CLEAR. Key in 60 seconds then press ENTER. Move the cursor to the temperature and press CLEAR, input 120, then press ENTER. Move the cursor to the guarantee and toggle OFF. Move the cursor to the agent and toggle to ALKALINE. Move the cursor to the tank temperature and press CLEAR, input 160, the enter. Once the operator has completed the prewash phase, press the PAGE DOWN button to go on to the Wash #1 phase.
3. The Wash #1 phase can be turned on or off by using the TOGGLE button on the key pad. Using the arrow keys on the key pad, move the cursor around each item on the phase. Move the cursor to the temperature and press CLEAR, input 165, then enter. Move the cursor to the GUARANTEE and toggle off. Move the cursor to the detergent and toggle to ALKALINE. Once the user has completed the Wash #1 phase, press the PAGE DOWN button to go on to the Wash #2 phase.
4. The Wash #2 phase can be turned on or off by using the TOGGLE button on the key pad. Move the cursor to the time and press CLEAR, input 180, then enter. Move the cursor to the temperature and press CLEAR, input 165, then enter. Move the cursor to the guarantee and toggle “on”. Once the operator has completed the Wash #2 phase, press the PAGE DOWN button to go on to the Soak phase.
5. The Soak phase can be turned on or off by using the TOGGLE button on the key pad. Once the user has completed the Soak phase, press the PAGE DOWN button to go on the Rinse #1 phase.
6. The Rinse #1 phase can be turned on or off by using the TOGGLE button on the key pad. Move the cursor to the time and press CLEAR, input 120, then enter. Move the

cursor to the temperature and press CLEAR, input 185, then enter. Move the cursor to the guarantee and toggle ON. Once the user has completed the Rinse phase, press the PAGE DOWN button to go on to the final rinse phase.

7. The Rinse #2 phase can be turned on or off by using the TOGGLE button on the key pad. Move the cursor to the time and press CLEAR, input 120, the enter. Move the cursor to the temperature and press CLEAR, input 140, then enter. Move the cursor to the guarantee and toggle on. Once the user has completed the Rinse #2 phase, press the PAGE DOWN button to go on to the Rinse #3 phase
8. The Rinse #3 phase can be turned on or off by using the TOGGLE button on the key pad. Move the cursor to the time and press CLEAR, input 60, then enter. Move the cursor to the temperature and press CLEAR, input 120, then enter. Move the cursor to guarantee and toggle off. Once the operator has completed the rinse #3 phase, press the PAGE DOWN button to go on to the clock set and password screens or if programming is complete, press ABORT to exit the program mode.
9. The clock set settings are entered in the same way as the time and temperature are done. Press CLEAR and key in new setting, then press ENTER. Use arrow keys to move between settings which need to be changed. Once the user has completed the clock setting, press the PAGE DOWN button to go on to the password screens or ABORT to exit the program mode.
10. The user can input up to a five digit (0 – 32000) numeric password. Press CLEAR then the new password and then press enter. Press ABORT to exit the program mode.

Starting Wash Cycle

To start the unit, the user chooses a preprogrammed cycle by pressing SELECT CYCLE. Press CLEAR on the key pad, and input a cycle between 1 through 12, then press ENTER. Press the START button on the key pad to run cycle.

Alarm

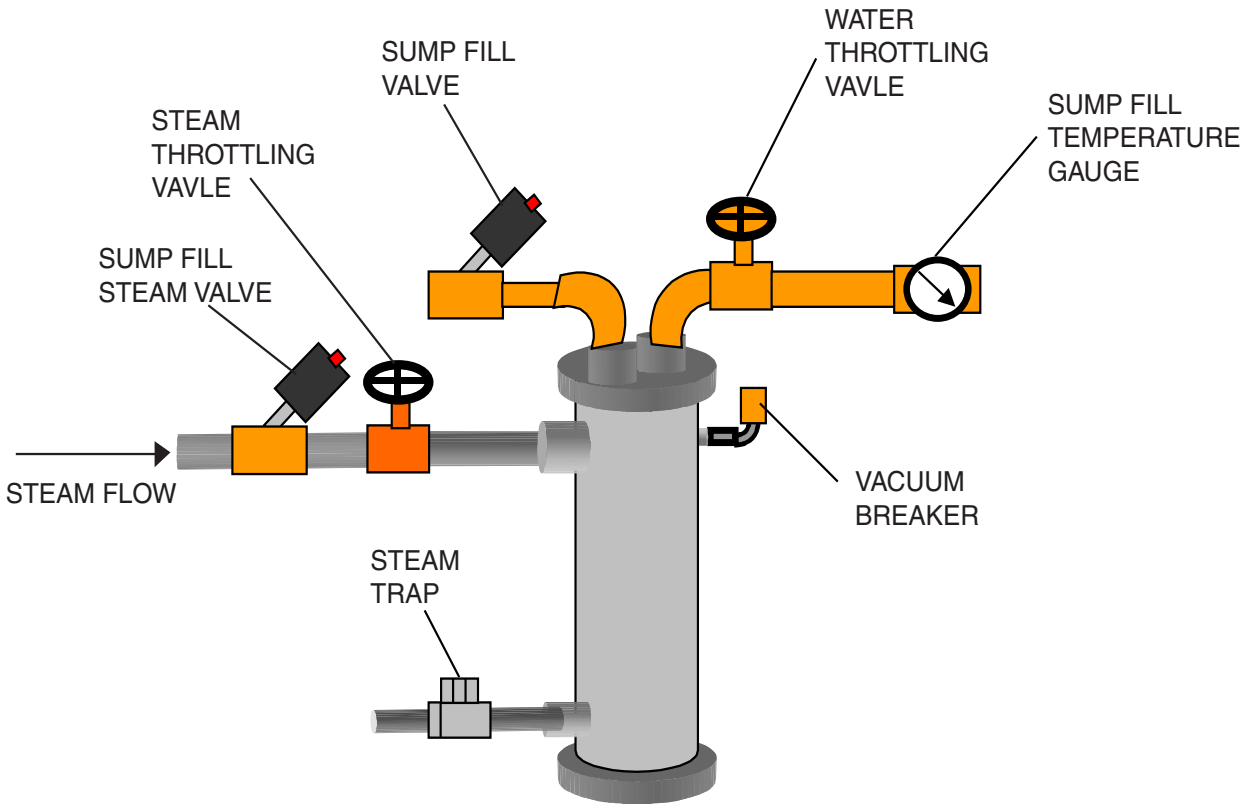
If an alarm should sound at any time, press ALARM SILENCE to turn the sound off, then follow the prompt on the display screen to solve the problem. Now press ALARM ACK on the key pad to return to the program.

Help

A help screen is provided to assist the user. Pressing the HELP button on the keypad will give the user direction on what to do next.

FillTemperature Settings

1. Turn water to full open setting
2. Turn steam to full open setting (temperature not to exceed 195^{O}F).
3. If water at full open and steam at full open does not create an out put temperature of 195^{O}F, turn water flow down until 195^{O}F is achieved.
4. If water at full open and steam at full open exceeds 195^{O}F, turn steam throttle valve down until in 195 range.
5. If temperature becomes unstable turn the water pressure regulator down to 5 psi lower than dynamic house pressure and repeat steps 1 to 5.



Section 3 Operating Instructions

GENERAL MACHINE OPERATION

Instructions here apply to the daily operation of this unit. They assume that the unit has been properly installed and pre-tested: that the compartment is clean, cycle selections have been programmed, the liquid supplies are set up, any optional equipment is ready for operation, etc.

- *BURN HAZARD: Do not open a Washer door during a cycle. This could release hot water through the door opening, resulting in burns to personnel.*
- *HOT SURFACES: The metal surface that surrounds the opening at the load and unload end of unit becomes hot during normal operation. Use caution when loading and unloading the washer.*

Start-up Procedure

The following steps should be followed in order to ensure proper machine start-up and only after the Authorized Service Technician has checked out and demonstrated the equipment.

1. Ensure that all utilities are properly connected and tightened to their respective machine connections.
2. Verify all incoming power supplied by the customer is as called out on the equipment specifications.
3. Verify steam supply meets the requirements called out on the equipment drawings.
4. To turn on the machine, turn on the Main Disconnect Switch located above the Touch Panel on the Operator's Control Panel.
5. The Touch Control Panel (TCP) immediately lights and performs a self-diagnostic test. Once complete the system Standby Screen displays and the machine is ready for operation.

Shut-down Procedure

Rotate the Electrical Disconnect Switch to the OFF position.

The Electrical Disconnect Switch de-energized the controls only; it does not remove all power from the washer.

General Operating Instructions

At the start of the processing period, the user activates the unit for automatic operation by turning on the main disconnect switch. The unit automatically goes to a self diagnostic test then fills with fresh water and starts heating up to programmed temperature. When filling and heating are complete the display shows "Ready for Operation".

The user:

- Places the load to be cleaned in the Chamber and closes the Door.
- Selects the desired cycle.
- Reviews the cycle and presses START on the Control Panel.

The unit automatically proceeds through the treatment process and alerts the user when the cycle is complete.

Treatment Schedule:

The Treatment Schedule is listed below. For additional information, refer to “Treatment Schedule” on page 1-11. The process for the wash cycle is as follows:

- Prewash
- Wash 1
- Soak (Optional)
- Wash 2
- Soak (Optional)
- Rinse 1
- Rinse 2
- Rinse 3
- Exhaust or Vapor Removal

The user then opens the Chamber Door and removes the cleaned load. On pass-through units with Door Interlocks, the Unload Door must be closed before the Load Door can be opened for the loading of the next cycle. When the Load Door is opened, the Control Panel displays the Cycle Selection Screen.

DAILY CHECKLIST

HOT SURFACES: The Chamber could be HOT. Use caution when loading and unloading the Chamber.

Before operating the unit each day:

1. Check the Printer Paper Roll and replace it if necessary. See page 7–4.
2. Clean the Self-Cleaning Debris Filter Screen. See page 4–3
3. Check chemical supplies.
4. Check chemical dispenser (if the unit has the optional Automatic Agent Injection System; see “Automatic Agent Injection System” on page 7–10

Operational Readiness

To ensure that the Washer is ready for processing without requiring a warm-up period, leave the Washer ON during regular periods of inactivity.

EMERGENCY STOP

BURN HAZARD: Do not open a Washer door during a cycle. This could release hot water through the door opening, resulting in burns to personnel.

Using the EMERGENCY STOP Switch

An EMERGENCY STOP switch is provided at the Load Door and Unload Door to immediately terminate all processing functions and activate all visual and audible alarms. The EMERGENCY STOP Switch is a push/pull type of switch.

Pressing ABORT

LED Control Panels – press the “ABORT” function key loacted in the left column of function keys

Touch Control Panels (TCP) – press the “ABORT” prompt in the lower right corner of the PROCESSING CYCLE SCREEN.

- The washer ceases operation.
- The initial Control Screen is displayed.

If desired, pressing START begins a new wash cycle.

Shutting Down the Washer

In an emergency, it may be necessary to remove electrical power supplied to the washer or to turn off the steam and water supplies. All users should know the location of the main circuit breaker to disconnect the main electrical power and the steam and water supply shutoff valves at the washer site.

The Electrical Disconnect Switch de-energizes the controls only; it does not remove all power from the washer.

Section 4 Maintenance

GENERAL MAINTENANCE SCHEDULE

The customer is responsible for these maintenance items at the intervals specified. Optional items may require additional maintenance. Refer to your Customer Manual for this information.

PERFORMANCE ASSURANCE PLAN

Preventive maintenance performed by factory-trained service representatives, using authorized parts and service techniques, is recommended. Recognizing symptoms of potential trouble and making corrections immediately is less costly and time consuming than repairing damaged equipment. Our Performance Assurance Plan offers scientific maintenance, not merely repair service.

For quality service on this equipment and information on our Performance Assurance Plan, contact Getinge/Castle, Inc. 1777 East Henrietta Road, Rochester, NY 14623-3133 or call 1-800-950-9912.

A Service Data Manual for this unit may be purchased from Getinge/Castle, Inc.

Table 4–1. Maintenance Schedule—Standard

MAINTENANCE ITEM	INTERVAL	SEE PAGE
• LOADING PRINT PAPER (option)	WHEN REQUIRED	4–2
• TEST SAFETY SYSTEMS • CLEAN THE PRIMARY DEBRIS FILTER • INSPECT THE AUTOMATIC SELF-CLEANING DEBRIS FILTER SCREEN AND SUMP	DAILY	4–2 4–2 4–3
• CLEAN THE SPRAY JETS AND HEADERS • INSPECT THE TEMPERATURE AND WATER LEVEL PROBES FOR DEBRIS AND DAMAGE • MAINTAIN THE CABINET	WEEKLY	4–4 4-4 4-4
• LUBRICATE THE PUMP MOTOR • CHECK THE GFI SENSOR	EVERY SIX MONTHS	4–5 4–5

ROUTINE MAINTENANCE SCHEDULE—STANDARD

When required

LOADING PRINT PAPER (option)

See “Loading Single Paper Ply Paper” on page 7–4.

Daily

TEST SAFETY SYSTEMS

NOTE ▶

Ensure that two (2) or more individuals are always present for this test.

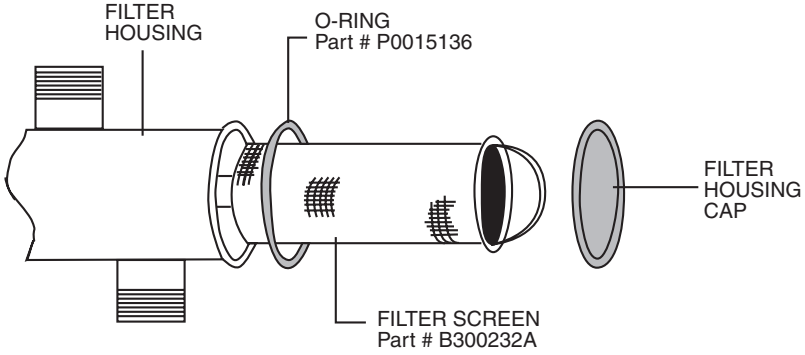
Test the Personnel Safety System by:

1. Pressing the EMERGENCY STOP button
   a) Alarm and machine disabled
2. Reset the Emergency Stop button and reset safety system.
3. Opening the Door(s)
   a) Alarm and machine disabled
4. Close Door(s) and reset safety system.
5. To reset after testing, the operator should turn safety reset system on. **(Switch will not return on its own.)** The switch is on the back side of the control panel.

CLEAN THE PRIMARY DEBRIS FILTER

1. Remove the Primary Debris Filter.
2. Clean the debris from the filter with water.
3. Replace the Primary Debris Filter.

Figure 4–1. AUTOMATIC SELF-CLEANING DEBRIS FILTER



INSPECT THE AUTOMATIC SELF-CLEANING DEBRIS FILTER SCREEN AND SUMP

1. Turn power off.
2. Remove retainer clamp on filter cover
3. Remove the cover, gasket, and filter screen
4. Rinse any debris out of screen
5. Carefully place filter screen back into filter housing
6. Place gasket and cover on the assembly and secure retainer.

Weekly

CLEAN THE SPRAY JETS AND HEADERS

1. With power turned off, open Chamber Door(s) **(a flashlight may be needed)**.
2. Push the debris through the jet and into the header with a small wire.
3. Remove the flush plugs from the end of the spray headers.
4. In manual mode, fill sump with water and turn pump on for 30 seconds.
5. Reinstall flush plugs
6. Turn on gravity drain and allow to drain totally.

INSPECT THE TEMPERATURE AND WATER LEVEL PROBES FOR DEBRIS AND DAMAGE

1. Locate the temperature and water level probes in the wash and rinse section sumps. **(Accessed externally)**
2. Drain wash and rinse tanks.
3. Remove sump cover for each tank.
4. Gently wipe off any debris around temperature and water level probes with a cloth.
5. Replace sump cover for each tank.

MAINTAIN THE CABINET

To maintain cabinet luster, wipe down with non-abrasive stainless steel cleaner in straight line with direction of grain.

Six (6) Months

LUBRICATE THE PUMP MOTOR

Re-lubricate the sleeve with a high grade ball and roller bearing grease every six (6) to twelve (12) months as indicated on the motor.

CHECK THE GFI SENSOR

ELECTRIC SHOCK HAZARD: Only an electrician should perform this test!

1. Turn on power to the washer.
2. Press test button on the Ground Fault Interrupt (GFI) located on back panel.
3. Power to the unit should go off.
4. Press reset.
5. Power to the unit should come back on.
6. Fill out GFI chart on the inside of the electrical box.

If this test fails, contact your Authorized Service Technician.

RECOMMENDED SPARE PARTS LIST

Consumable Stock

DESCRIPTION	PART NO.
Printer Paper - 3.25”W x 3” Diameter Single Ply	P0020680
Printer Ribbon	P0020681
Lustre Stainless Steel Cleaner/Polish (13 oz.)	61301600026
Door Gasket (1 per door)	R0013125
Backup Battery (2/3 AMP, 3V, Lithium)	P0020693

Spare Parts

Refer to the Customer Manual for a list of recommended spare parts. Electrical and piping schematics are also in the Customer Manual.

Section 5 Troubleshooting

PROBLEM	PROBABLE CAUSE	CORRECTION
No power or screen is blank.	1. Building's electrical supply disconnect switch (circuit breaker) is off. 2. Primary breaker on transformer tripped. 3. Secondary breaker on transformer tripped. 4. GFI is tripped. 5. Control board failed.	1. Set the switch to the on position. 2. Reset circuit breaker 3. Reset circuit breaker 4. Check GFI. 5. Replace the control board.
Machine is constantly draining.	1. Control signal off. 2. Drain valve is worn.	1. Use meter to check signal. 2. Rebuild or replace drain valve as necessary.
Machine leaks water into cabinet when it drains water.	1. House water fill valves faulty. 2. Jet valve is worn.	1. Check house water fill valves If valves work, but continue to leak, replace valve seals. If valves do not work, replace valves. 2. Rebuild or replace the jet valve
Processor does not read door open or sound alarm.	Door switch is damaged.	Replace the door switch.
Pump pressure is higher than normal (30-40psi).	1. Spray jets plugged. 2. Self cleaning screen plugged with debris.	1. Flush out jets. See "CLEAN THE SPRAY JETS AND HEADERS" on page 4-4 2. Clean screen. See "INSPECT THE AUTOMATIC SELF-CLEANING DEBRIS FILTER SCREEN AND SUMP" on page 4-3

PROBLEM	PROBABLE CAUSE	CORRECTION
Pump pressure is lower than normal (20-30psi).	1. Spray jets missing.	1. Replace spray jets as necessary
	2. Header plugs are not in place.	2. Replace as necessary.
	3. Pump seals are worn (check for water under pump).	3. Replace as necessary.
	4. Self cleaning debris filter may be plugged.	4. See “INSPECT THE AUTOMATIC SELF-CLEANING DEBRIS FILTER SCREEN AND SUMP” on page 4-3
	5. Pump connection to header is leaking, allowing air into pump.	5. Replace hose or tighten clamps.
Water is leaking from washer	1. Door(s) not fully closed and secured.	1. Fully close and secure the door(s).
	2. Door gasket damaged.	2. Replace the door gasket.
	3. Window gasket damaged.	3. Replace the window gasket.
	4. Piping is leaking.	4. Check piping and valves. Tighten or replace as necessary.
	5. Header is not installed.	5. Install the header.
	6. Duct work leaking, water running down side of machine.	6. Repair the duct work.
Cycles do not begin when the start button is pressed.	1. Water level is low.	1. Inspect and clean lever control probes.
	2. Machine not up to temperature.	2. Check steam supply. Check utility valves.
	3. Cycle parameters not set properly.	3. Check program settings.

Shutting Down the Washer

In an emergency, it may be necessary to remove electrical power supplied to the washer or to turn off the steam and water supplies. All users should know the location of the main circuit breaker to disconnect the main electrical power and the steam and water supply shutoff valves at the washer site.

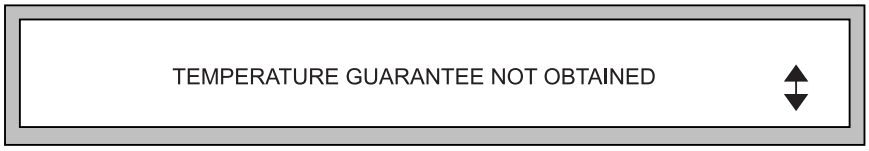
The Electrical Disconnect Switch de-energizes the controls only; it does not remove all power from the washer.

Screens Activated by Alarms

If any of the following messages appear during the cleaning cycle, follow the instructions as noted.

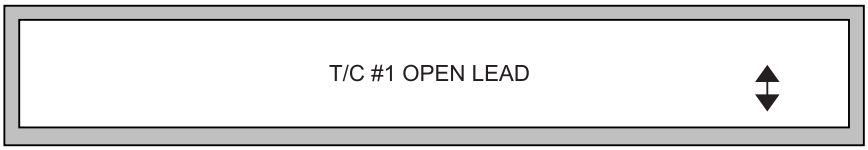
If this alarm appears on the screen, the sump has taken too long to fill.

1. Press “ALARM ANSWER”.
2. Check house water pressure (must be 35PSI minimum)
3. Check sup0ply valve (valve must be fuly open).
4. Check air pressure (air pressure must be 80 PSI minimum).



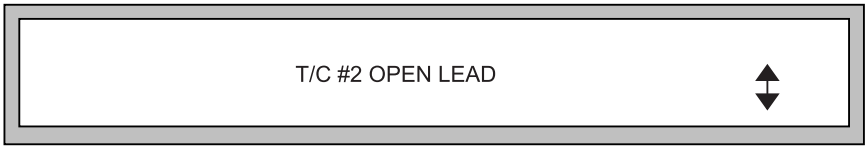
If this alarm appears on the screen, the sump has taken too long to heat.

1. Press “ANSWER ALARM”.
2. Check house steam pressure (must be 30PSI minimum unless ordered with low pressure option [10 PSI minimum]).
3. Check condensate valve (must be fully open).
4. Check supply valve (must be fully open).
5. Check air pressure (air pressure must be 80 PSI minimum).
6. Check exhaust damper (must go to closed position when treatment pump is running).



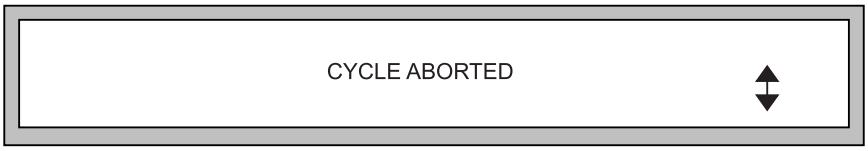
If this alarm appears on the screen, the thermo-couple wire is broken or disconnected.

1. Trace out the thermo-couple wire (Type K) from the control panel to the sump temperature probe.
2. Repair or replace as needed.



If this alarm appears on the screen, the thermo-couple wire is broken or disconnected.

1. Trace out the thermo-couple wire (Type K) from the control panel to the sump fill temperature probe.
2. Repair or replace as needed.

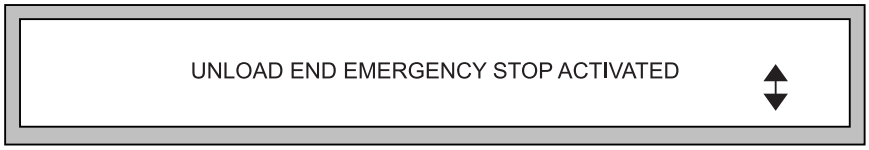


If this alarm appears on the screen, the “CYCLE ABORT” button has been pressed.

1. Press “ANSWER ALARM” (cycle will have to be started from the beginning).

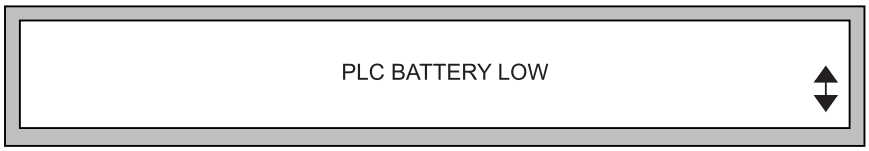
If this alarm appears on the screen, the “LOAD END EMERGENCY STOP” switch has been pushed.

1. Verify there are no emergency conditions at the load end of the unit.
2. Turn off the main power.
3. Pull button out.
4. Turn main power back on.



If this alarm appears on the screen, the “UNLOAD END EMERGENCY STOP” switch has been pushed.

1. Verify there are no emergency conditions at the unload end of the unit.
2. Turn off the main power.
3. Pull button out.
4. Turn main power back on.



If this alarm appears on the screen, the battery in the power supply module is losing power.

1. Replace battery
2. If second battery goes low, call for service, possible defective power supply.

Section 6 Installation Instructions

INTRODUCTION

This section is for convenient customer reference. It summarizes information used for installing the bedding dispenser.

Official agreements, pertinent drawings, and related documents are provided separately to the customer by authorized personnel.

UNCRATING & EQUIPMENT INSPECTION

Before signing the Bill of Lading and accepting the equipment, inspect the outside of the crates for any visible damage. If any damage has occurred, note it on the Bill of Lading.

After accepting the equipment, if any visible damage is apparent notify the carrier's insurance and process a claim. At this point it is good practice to take pictures of the crate to back up the claim if internal damage has occurred.

Move the crate(s) to the general area where the machine will be set in place. Uncrate the outside of the machine and inspect the contents of the equipment. If damage is apparent, take pictures of the areas.

Upon completion of the inspection process, place the machine in the spot where the equipment will be connected to the facility's services. Make sure that the location of the equipment has at least a 30" clearance around the machine control panel for general maintenance.

Installation should be performed by Authorized Service Technicians only.

INSTALLATION /ASSEMBLY CHECKLIST

Once your machine has been inspected for damage and properly uncrated, you are now ready to install the equipment. Installation should be performed by Authorized Service Technicians only. The following should be performed before notifying your installation contractor to insure the smooth installation of your equipment.

Equipment Location

- Crates are in the room.
- Clear access is available for installation personnel.
- Lighting and 30 AMP/110 Volt AC power is present within 25 feet of the installation area.
- Heating and Air Conditioning is available in the installation area.
- A Pass-through or Wall opening is correct to supplied room layout and equipment drawings (if applicable).
- On floor mounted units, the floor has been coated/painted under the unit, if applicable.

Utilities

Check to insure that the following utility requirements are as follows:

- Facility steam connection, maximum dynamic pressure, and flow rate is as specified on the certified specification and equipment drawings.
- We recommend the steam supply line have a drip leg and steam trap to prevent debris and excess condensation from entering the equipment steam supply.
- Hot Tap Water supply connection, dynamic pressure, flow rate, and temperature, should meet or exceed the minimum requirement or as specified on the equipment drawings.
- Any special application water is supplied at specified pressure as on the equipment drawings, if applicable.
- A Condensation connection is as specified on the equipment drawings.
- Vent connections and flow rates are available as specified on the equipment drawings.

Electrical

- Verify the electrical supply voltage is as specified on the equipment drawings and as noted on the nameplate on the machine.
- Insure the equipment is provided with a fused disconnect switch located within 10-15 feet from the unit's control panel.

STARTUP

To ensure proper machine startup, follow these steps:

LED Control Panel

1. Ensure that all utilities are properly connected to their respective machine connections and tightened.
2. Verify all incoming power supplied by the customer is as called out on the equipment nameplate.
3. Verify steam supply meets the requirements called out on the equipment drawings.
4. The LCD Display will immediately illuminate and perform a self diagnostic test and make communication with the main processor. Once complete, the system's standby screen will display and the machine is ready for operation.
5. From the LCD's standby screen, press the button labeled SELECT CYCLE and the cycle selection screen should appear on your LCD.
6. Select the desired cycle by pressing the designated prompt.
7. Press REVIEW CYCLE. The review phases screen will appear, summarizing your cycle characteristics
8. Press START CYCLE to begin automatic operations.

NOTE▶

If any red lights are lit when the start button is pressed, the machine will not start.

Touch Control Panel (TCP)

1. Ensure that all utilities are properly connected to their respective machine connections and tightened.
2. Verify all incoming power supplied by the customer is as called out on the equipment nameplate.
3. Verify steam supply meets the requirements called out on the equipment drawings.
4. The Touch Control Panel (TCP) will immediately light and perform a self-diagnostic test. Once complete, the system Standby Screen will appear. The machine is now ready for operation.
5. From TCP's standby screen, press the button labeled PUSH TO ACTIVATE CONTROL SYSTEM and the cycle selection screen should appear on your TCP.
6. Select the desired cycle by pressing the designated prompt.
7. Press REVIEW CYCLE and the review phases screen will appear summarizing your cycle characteristics.
8. Press START MODE and the process screen will appear with the words, STANDBY MODE in the upper right hand corner of the screen. The unit will begin to fill with water and heat once the tanks are full.
9. Press START CYCLE to begin automatic operations.

If any guarantees are selected, the unit will NOT start until the tank solutions have reached temperature.

CHECK-OUT PROCEDURE

Authorized Service Technicians will have the Installation Checkout Sheet for the 1800 Series Cage and Bottle Washer. The Service Technician will verify the unit is operating correctly before leaving the installation site.

TECHNICAL DATA

SERVICE REQUIREMENTS

Utilities and services are furnished by others in accordance with the official drawings for your unit. The utilities are to be supplied with manual shut off valves, electrical services are to be supplied with fused disconnect switches, and all exhaust ducts are to be supplied with manual dampers. For utility requirements refer to the certified specification document .

Section 7 Optional Equipment

INTRODUCTION

The 1800 Series offers numerous options to meet each customer's specific needs. This chapter lists the most commonly selected options. Your washer may not have all of the options listed, and could have other specific options. For the options selected with your washer, please refer to your Customer Manual.

MOST COMMON OPTIONS

Right or Left Handed Service

The unit is constructed with the service side on either the left or right side of the unit, relative to the Load End.

Vertical Sliding Door or Drop Down Door

All doors are of double wall construction with rigid foam insulation. Tempered glass, water-tight observation windows are provided in both the Load and Unload Doors.

VERTICAL SLIDING DOOR

The unit contains a manually operated, counter balanced, vertical sliding door.

DROP DOWN DOOR

The unit contains a manually operated, counter balanced, drop down door. A stainless steel washing rack that rolls out onto the door is included for ease of loading and unloading.

VERTICAL POWER DOOR

All doors are powered open and closed to permit ease in loading and unloading the chamber. The system includes door activation switches and status lights at all door locations which are operated by the automatic control system.

Single Door or Double Door (Pass-Through)

SINGLE DOOR

The unit is loaded and unloaded through the same door

DOUBLE DOOR (PASS-THROUGH)

The unit is provided with an additional door for pass-through operation and is complete with an unload end Control Panel. The system includes door activation switches and status lights at all door locations which are electrically wired to the Programmable Logic Controller (PLC).

Door Interlock (Only Available on Double Door [Pass-Through])

Both Load and Unload manual doors are electro-mechanically interlocked so that only one door may be in an open position at a time to ensure separation of clean and contaminated areas of the facility.

Temperature Guarantee

DESCRIPTION

All phases of the wash cycle except Soak and Exhaust have the option to select a Temperature Guarantee Mode. When selected, this causes the unit to fill and spray water normally for that phase, without allowing the main timer to start counting down until the setpoint temperature has been attained. If at any time the sump temperature should fall below the set point, the main timer stops until the temperature exceeds the setpoint. Failure to do so in a set period of time generates a “TOO LONG TO HEAT” alarm.

USER CONTROL

Program the desired temperature into the user program and turn on the guarantee in the desired phase(s).

Controls

TOUCH CONTROL PANEL (TCP)

A solid state microcomputer control system monitors and automatically controls all process operations and functions. Cycle phase times and temperatures, and other key process parameters are programmable and may be locked in by supervision. The twelve-cycle menu of treatment processes may be programmed and retained to permit operating personnel to accommodate a wide variety of load and processing requirements. Cycle programming may be controlled by a supervisory access code to ensure process integrity. Each cycle program may be reviewed and printed on demand.

The optional Strip Chart Printer must be selected to have this feature.

Programming is in standard military time, Fahrenheit or Centigrade temperature. Times and temperature are expressed in seconds and one degree increments respectively. An internal battery backs up all cycle memory.

A highly visible color touch panel screen displays cycle program data on demand and real time in process cycle performance. All cycle deviations are alarmed both visually and audibly, recorded and must be acknowledge by the user.

A built-in service diagnostic program, accessible by service access code, is included and displayed to permit system calibration and verification of satisfactory component operation. Service access to the control panel is from the front of the control terminal to permit further ease of maintenance.

LED CONTROL PANEL

A solid state microcomputer control system monitors and automatically controls all process operations and functions. Cycle phase time and temperatures, and other key process parameters are programmable and can be locked in by supervision. The cycle menu of treatment processes can be programmed and retained to permit operating personnel to accommodate a wide variety of load and processing requirements. Cycle programming can be controlled by a supervisory access code to insure

process integrity. Each cycle program can be reviewed and printed on demand.

NOTE ▶ *The optional Printer must be selected to have this feature.*

Programming is in military time, Fahrenheit or Centigrade temperature. Times and temperatures are expressed in seconds and one degree increments respectively. An internal battery backs up all cycle memory and permits completion of a cycle upon restoration of power after a power disruption.

A highly visible two line LED display screen displays cycle program data on demand and real time in process cycle performance. All cycle deviations are alarmed both visually and audibly, recorded and must be acknowledged by the user.

RS232 Data Computer Port

A RS232 port is provided to permit the capability to download cycle real time performance data to a remote computer terminal. Custom software may be provided to accommodate specific applications.

RS485 Data Computer Port

A RS485 port is provided to permit the capability to download cycle real time performance data to a remote computer terminal. Custom software may be provided to accommodate specific applications.

Printer

An integral strip chart printer, with paper take-up, is provided to record all cycle program and in process performance data. Each cycle program, including time and temperature set points, may be printed on demand. In-process cycle data is automatically printed to provide a chronological time/temperature profile of actual cycle performance.

DESCRIPTION

A printer, with paper take-up, records all cycle programs and in process performance data. Each cycle program, including time and temperature set points, may be printed on demand. In-process cycle data is automatically printed to provide a chronological time/temperature profile of actual cycle performance.

USER CONTROLS

Figure 7–1. PRINT CYCLE

When pressed, this will cause the current program to be printed out.

Figure 7–2. EVENT PRINT ON

When activated (LED on or Green Color), cycle statistic will be printed out automatically during the cycle.

MAINTENANCE REQUIRED

Change the paper roll as needed. (See “Loading Paper”)

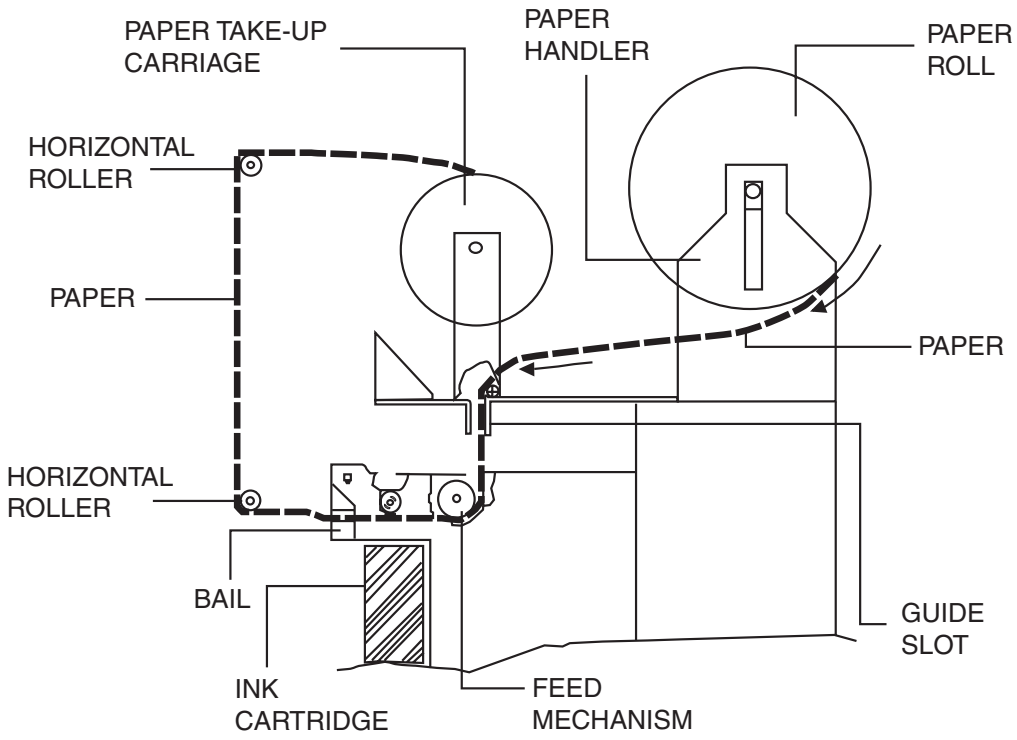
Replace spent Ink cartridges with new cartridges as needed (see attached instructions on cartridge loading).

LOADING PAPER

1. Turn off power to the unit.
2. Place the paper roll in the paper handler (Paper roll must have rolling pin at its center).

3. Carefully direct the single-ply paper, from the paper roll, down into the guide slot until the paper stops against the feed mechanism. See Figure 7–3.

Figure 7–3. LOADING PAPER



4. The paper is now ready to be advanced automatically through the rest of the system. To do this, first turn the power on.
5. Guide the paper through the bail slot up and around the two horizontal rollers and attach the leading edge to the clip on the paper take-up carriage.
6. Advance the paper take-up carriage by hand until the paper is taut.
7. The paper is now loaded.

INK CARTRIDGE LOADING

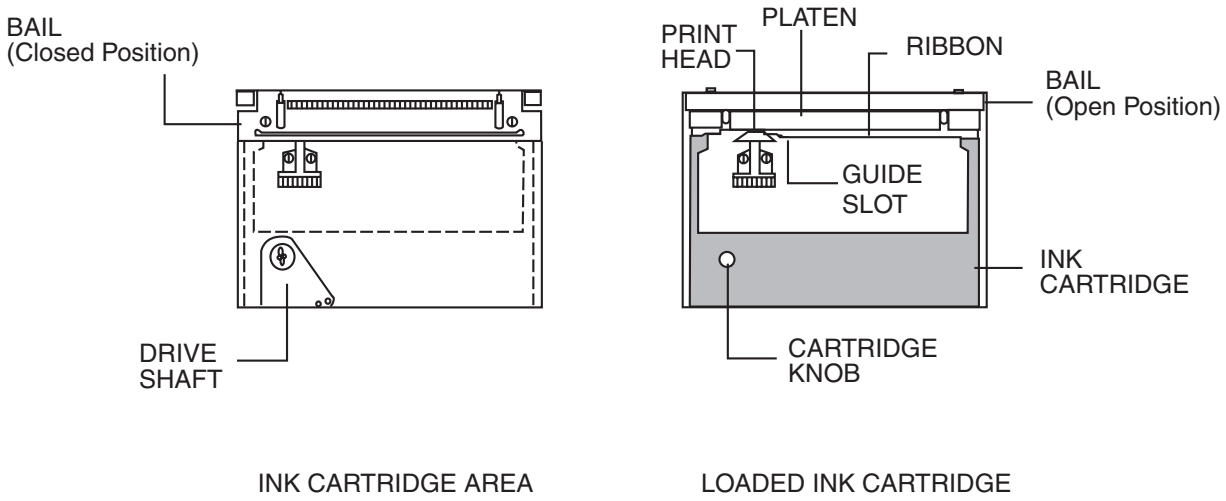
1. Turn power off. If there is a used ink cartridge already loaded, remove it by opening the bail and pulling the ink cartridge directly over the drive shaft.
2. Before inserting the new ink cartridge, turn the cartridge knob counterclockwise until ribbon is taut.

3. Open the bail. Carefully mount the ink cartridge onto the drive shaft, keeping the ribbon between the plate and the print head.

NOTE

You should hear the ink cartridge snap into place. See Figure 7–4.

Figure 7–4. INK CARTRIDGE LOADING



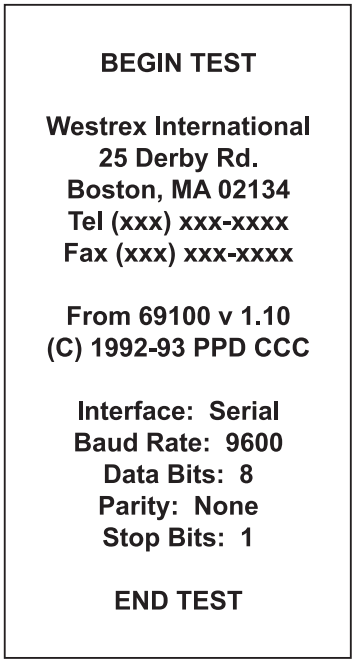
4. Thread the ribbon through the guide slot. Before closing the bail, turn the cartridge knob to make sure the ribbon is still taut.
5. Close the bail. The ink cartridge is now loaded.

SELF-TEST PRINTOUT

1. Be sure that the ink cartridge and paper have been loaded.
2. Turn power off.
3. Press and hold the feed switch.
4. Turn power on, holding the feed switch until the printer starts printing.

5. Release the feed switch. The self-test prints and should look similar to Figure 7–5.

Figure 7–5. PRINTER SELF TEST



PRINTER INFORMATION

Printer

MTP # P0020663
Kiosk & Gaming Printer #4700 W/Ribbon
40 Column, 12 Character/Inch, 8 Line/Inch
Serial RS-232C, Interface, 9600 Baud Rate

Printer Paper

MTP #P0020680
3.25W x 3 Dia Single Ply #32317

Printer Ribbon

MTP #P0020681
#32434

Removable Center Washing Header

An additional header is provided in the center of the chamber to increase the washing capacity of washer. This header can be removed to accommodate larger items to be washed. The option increase the overall washer width by 6 inches.

Service Enclosure System

A stainless steel cabinet, with removable access panels, is provided to fully enclose the service and component side of the unit from the floor to the top of the unit.

Internal Chamber Illumination

An exterior vapor proof port and light is provided to illuminate the chamber interior.

Stainless Steel Treatment Components

All components including valves, pump, and piping that come in contact with the recirculating treatment solution are 304 stainless steel to provide system life and durability.

Non-Recirculated Final Pure Water Rinse

Hot pure water from house supply is heated by a stainless steel steam heat exchanger and directed through a stainless steel, final rinse, jet spray header under house supply pressure and retained in the rinse tank for the recirculated rinse and pre-wash. Final pure water rinse temperature is manually adjustable to 195ºF. Other pure water final rinse options are available to accommodate other pure water supply conditions.

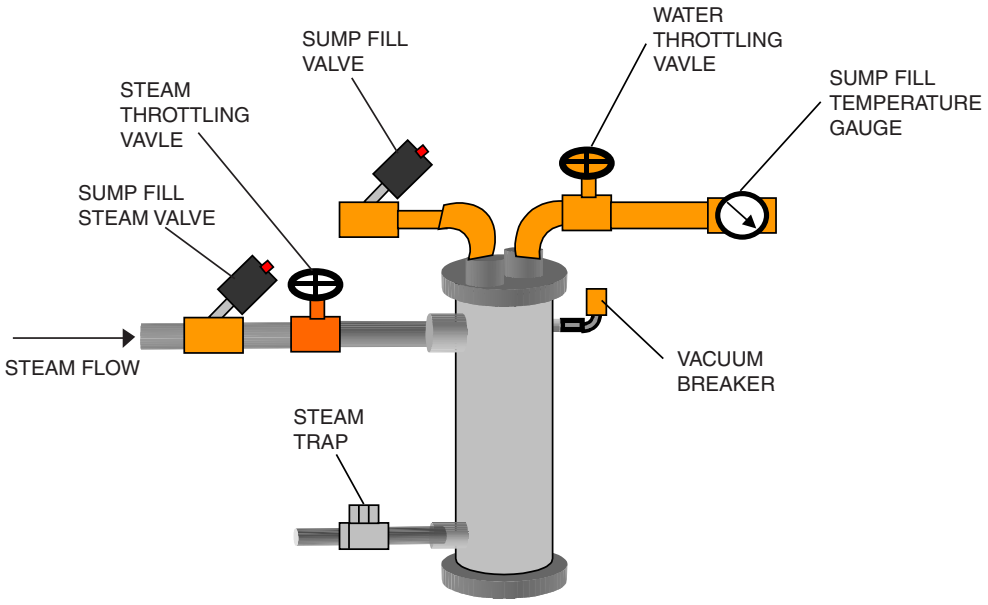
Water Pressure Reducing Station

Provided in the inlet of the house tap water line is a pressure reducing station that stabilizes the incoming water pressure, delivering an even filling rate to the unit.

Hot Tap Water Temperature Booster

An instantaneous steam-to-water heat exchanger is provided to raise the house tap water supply temperature by 80ºF.

Figure 7–6. HOT TAP WATER TEMPERATURE BOOSTERThe sump fill



steam valve allows steam to flow to the heat exchanger. The steam throttling valve controls the flow rate of the steam.

- The sump fill valve fills the sump with house supply water. The water throttling valve controls the flow rate of the water. The sump fill temperature gauge monitors the sump fill water temperature (195°F maximum).
- The vacuum breaker releases the vacuum in the heat exchanger to allow condensate to drain out of the shell.
- The steam trap allows condensate to pass back to the return and keeps the steam in the exchanger for maximum heat gain by the water.

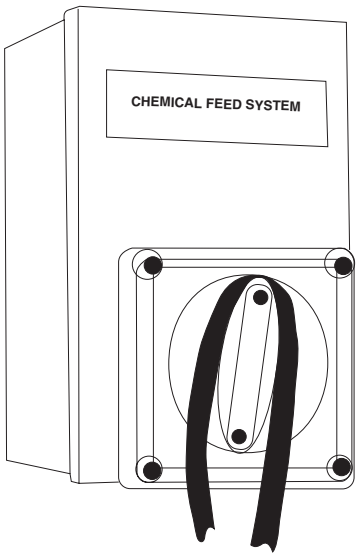
Automatic Agent Injection System (Optional)

A proportional type injection system is provided to automatically inject user supplied liquid cleaning agent into the sump.

At the start of the Wash phase of a cycle, the Chemical Dispenser automatically pumps liquid detergent into the hot water supply held in the wash sump. The Dispenser operates for the preset period of time it takes to deliver the correct amount of detergent, after which it shuts off automatically.

Dispenser priming and timing is to be accomplished by Authorized Service Technician utilizing the password restricted service screens.

Figure 7–7. LIQUID SUPPLY DISPENSER



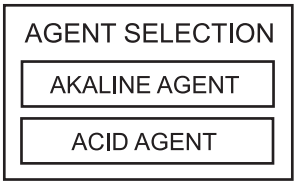
CHECK PRIOR TO ROUTINE OPERATION

Check that:

1. A sufficient supply of liquid is available for the Dispenser before operating the washer.
2. The end of the Dispenser's Inlet Tubing is properly inserted into the correct liquid supply container.USER CONTROLS

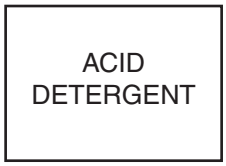
User must program the chemical to be used for the program cycle.

Figure 7–8. PROGRAM THE CHEMICAL



During programming mode, select the agent to be injected during the wash 1 and 2 phase. On text controls, use the TOGGLE button to change from Acid to Alkaline.

Figure 7–9. TOGGLE BUTTON BEFORE



Manual mode causes the Alkaline detergent pump to be activated for a preset period of time.

Figure 7–10. TOGGLE BUTTON AFTER

NOTE ▶

Concentration must be tested on a monthly basis to ensure proper amount of chemical is being injected into Wash 1 and Wash 2 sump.

PUMP ON/OFF INDICATOR

Red light that comes on when the pump is energized (automatically or manually).

PUMP

Draws liquid from the supply source and feeds it to the wash sump.

INLET TUBING

Carries liquid from the supply source to the pump.

OUTLET TUBING

Carries liquid from the pump to the wash sump.

Automatic Agent Injection System – Time Based

A non-monitored, time based, volumetric type injection system is provided to automatically meter user supplied liquid cleaning agent into the sump.

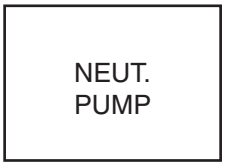
Agent Neutralization System Non-Monitored

DESCRIPTION

Time based neutralization of highly acidic or alkaline treatment solutions to a neutral pH before discharge to drain, conforming to plumbing code requirements.

USER CONTROLS

Figure 7–11.



Manual mode causes the Acid Neutralizer pump to be activated for a preset period of time.

MAINTENANCE REQUIRED

None

NOTE▶

*On units providing only Dry Contacts, the load placed on the contacts must be **no greater than ½ amp.***

pH Monitored

TREATMENT SOLUTION pH NEUTRALIZATION SYSTEM – TIME BASED

A non-monitored, time based, volumetric type injection system is provided to automatically meter user supplied neutralization agent into the sump, to neutralize highly acidic or alkaline solutions to a neutral pH before discharge to drain to conform to plumbing code requirements.

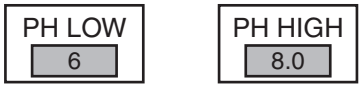
TREATMENT SOLUTION pH NEUTRALIZATION SYSTEM – MONITORED

A monitored, proportional type system to automatically inject user supplied neutralization agent into the sump to neutralize highly acidic or alkaline solutions to a neutral pH before discharge to drain to conform to plumbing code requirements. The treatment solution pH is sensed with a probe and a neutralizing agent is injected to achieve a neutral pH.

USER CONTROLS

the range for the discharge of solutions may be adjustable from 0.0 – 14.0 using the following controls: “pH High” which sets the upper limit for discharge to drain, and “pH Low” which sets the lower limit for discharge to drain.

Figure 7–12. pH MONITORED



MAINTENANCE REQUIRED

Every six (6) months, calibrate pH transmitter and probe.

To calibrate the pH transmitter and probe:

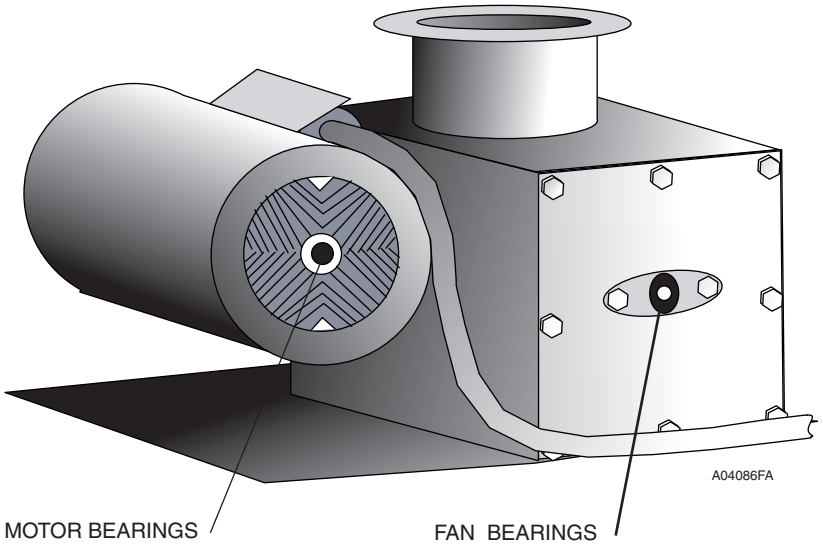
1. “pH CAL” adjustment is made with a buffer solution of 7 pH. Adjust the “CAL” potentiometer until the display reads 7.00.
2. “SLOPE” adjustment is made with a buffer solution of 4 pH. Adjust “SLOPE” for a reading of 4.00. Continue to adjust each potentiometer alternately using the specified buffer solution until no adjustment is required.

Power Exhaust

DESCRIPTION

The unit is provided with a stainless steel fan to be mounted on the exhaust plenum system. The fan is interwired with an automatic control system to exhaust residual vapor and hot moist air from the chamber.

Figure 7–13. FAN SYSTEM



USER CONTROLS

None

MAINTENANCE REQUIRED

ITEM	INTERVAL	MATERIAL	QUANTITY
Belt Drive Fan Bearings	Daily	Lithium #2 grease	One to two strokes of grease gun.
Motor Bearings	Six Months	Lithium #2 grease	One to two strokes of grease gun.

NOTE

Do not use a pneumatic pressure greasing system, it fills the bearing chamber completely.

Drain Discharge Cool-Down System – Non-Monitored

DESCRIPTION

Cold tap water is automatically injected into the drain discharge to lower the discharge temperature before entering into the building's drain system.

USER CONTROLS

None

MAINTENANCE REQUIRED

The drain discharge temperature must be checked with a calibrated thermometer to ensure the proper amount of cold water is being injected into the drain.

Steam and Water Pressure Gauges

Provided on the incoming steam and water line are pressure gauges to monitor the facility utilities.

Vapor Removal Condenser

A condenser is provided to reduce excessive vapor and cool the exhaust air prior to entering the building exhaust system. The exhaust vapor is reduced.

M.O.D.E.M. (MTP Online Diagnostics, Evaluation, and Monitoring) System

DESCRIPTION

A modem is provided during the warranty period for online service diagnostics, evaluations, and software upgrades. The M.O.D.E.M. System allows factory software engineering personnel immediate access to the unit's control system program. Factory service personnel will then be able to troubleshoot, identify system malfunctions, and recommend repair requirements to local maintenance personnel within minutes of a malfunction. The M.O.D.E.M. System reduces expensive on site Repair Technician costs allowing the customer to perform maintenance repairs internally, and minimize lost productivity due to possible equipment downtime.

Figure 7–14. MODEM CONNECTIONS

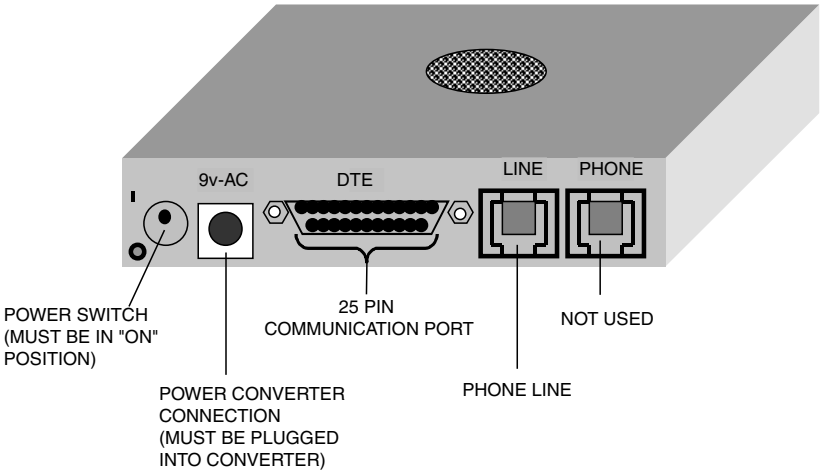
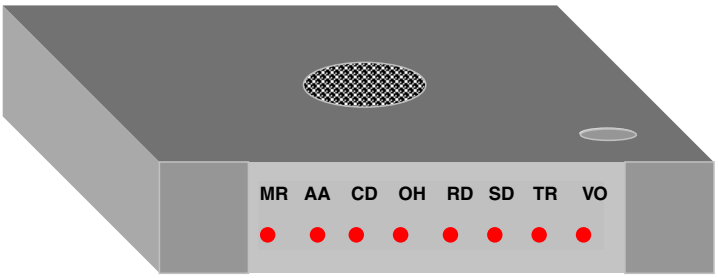


Figure 7–15. MODEM INDICATOR LIGHTS



For the modem to operate:

- The modem must be plugged into a 9VAC power converter.
- The communication port must be connected to the PRT2 port of the programmable controller.
- The modem is connected to a dedicated analog phone lines.
- The power switch must be in the 1 (ON) position.

ADDITIONAL OPTIONS

Note: Some Options are not available on all models.

Please see the “Additional Options” section of your Customer Manual if your washer has one of these options.

- Remote Control Terminal Location
- Barrier Flange System for Recessing Through One or More Walls.
- Secondary Electrical Transformer
- Fused Electrical Disconnect Switch
- Seismic Requirements

ACCESSORIES

Mouse Box Rack — Two stainless steel racks are provided.

Rat Box Rack — Two stainless steel racks are provided.

Pan Rack — Two stainless steel racks are provided to process pans with a maximum width of two inches.

Transfer Cart — A stainless steel transfer cart is provided to transport racks to and from the washer. The transfer card interfaces with the chamber opening to permit easy transfer of racks into and out of the chamber.

Feeder Bottle Baskets — Stainless steel bottle baskets are provided for processing 8, 16, or 32 oz. bottles. Baskets are configured in a 4 x 6 pattern.

Appendix A Manual Screens

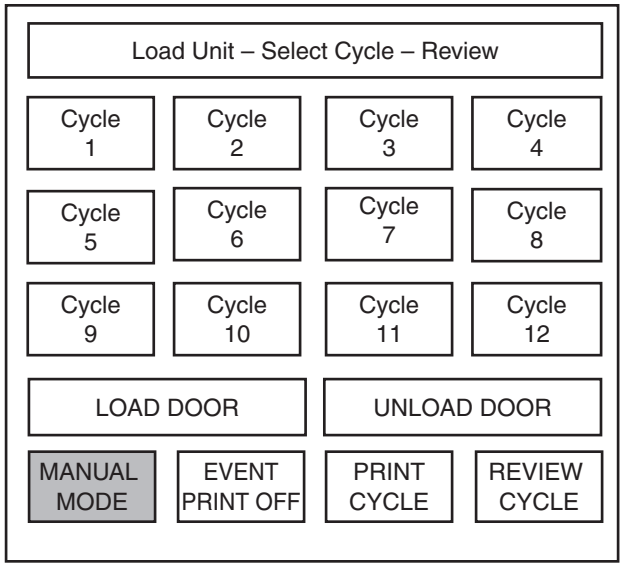
INTRODUCTION

The Touch Control Panel is a mult-cycle color graphic microcomputer control system. A total of twelve treatment cycles can be programmed and stored into memory. Manual mode is for those unique cycles that need to be run on occasion and are not part of the normal daily routine. It is a cycle that is programmed at the beginning, and is not maintained in memory after the cycle has completed.

The following screens are for the Touch Control Panel only. For LED Control Panel Manual Screens, see page 2–16.

PROGRAMMING CYCLE

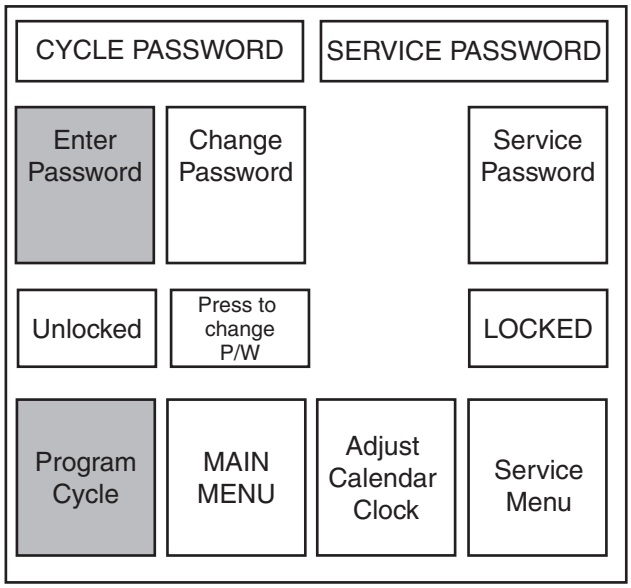
CYCLE SELECTION SCREEN



CYCLE SELECTION SCREEN:
Programmer should-

➢ Select MANUAL MODE

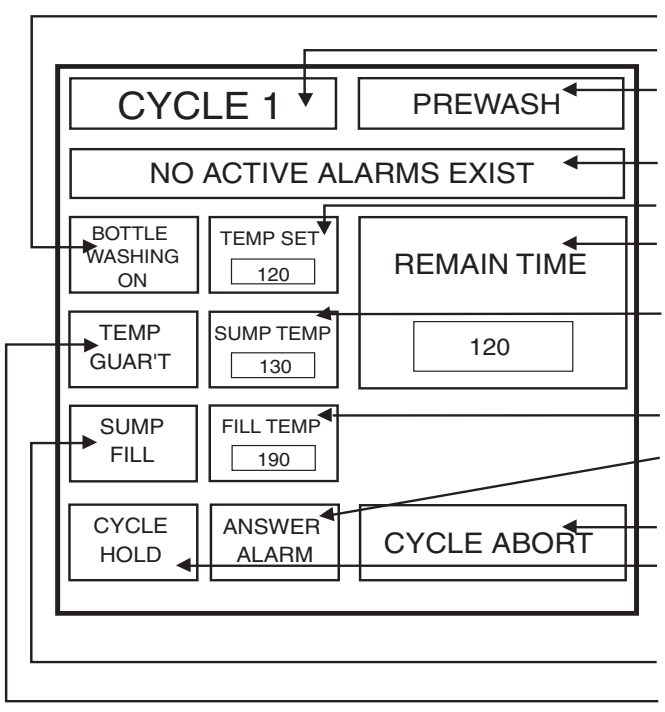
CYCLE ACCESS SCREEN



CYCLE ACCESS SCREEN
Programmer should-

- ➢ Press ENTER PASSWORD
- ➢ Type in correct password “12345”, press ENTER, then press DONE. This will unlock the system.
- ➢ Select PROGRAM CYCLE

PROCESS SCREEN



This prompt displays when the Bottle Washing option is activated.

Displays the current cycle.

Displays the current phase of the cycle.

Displays the current alarm status.

Displays the programmed sump temperature parameter.

Displays the current remaining time in phase.

Displays the actual sump temperature.

Displays the house water fill temperature.

Press this prompt to clear any timed alarm.

Press this prompt to stop all functions of the washer and set the alarm.

Press this prompt to stop the phase timer. Press the prompt again and the phase timer will resume. (Timer will resume after five (5) minutes if the prompt is not pressed again to release the timer.)

This prompt displays during the sump filling process.

This prompt displays if the program has a "TEMP. GUARANTEE" on the temperature of the sump.

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